

NORTHROP NEWS

VOLUME XVI

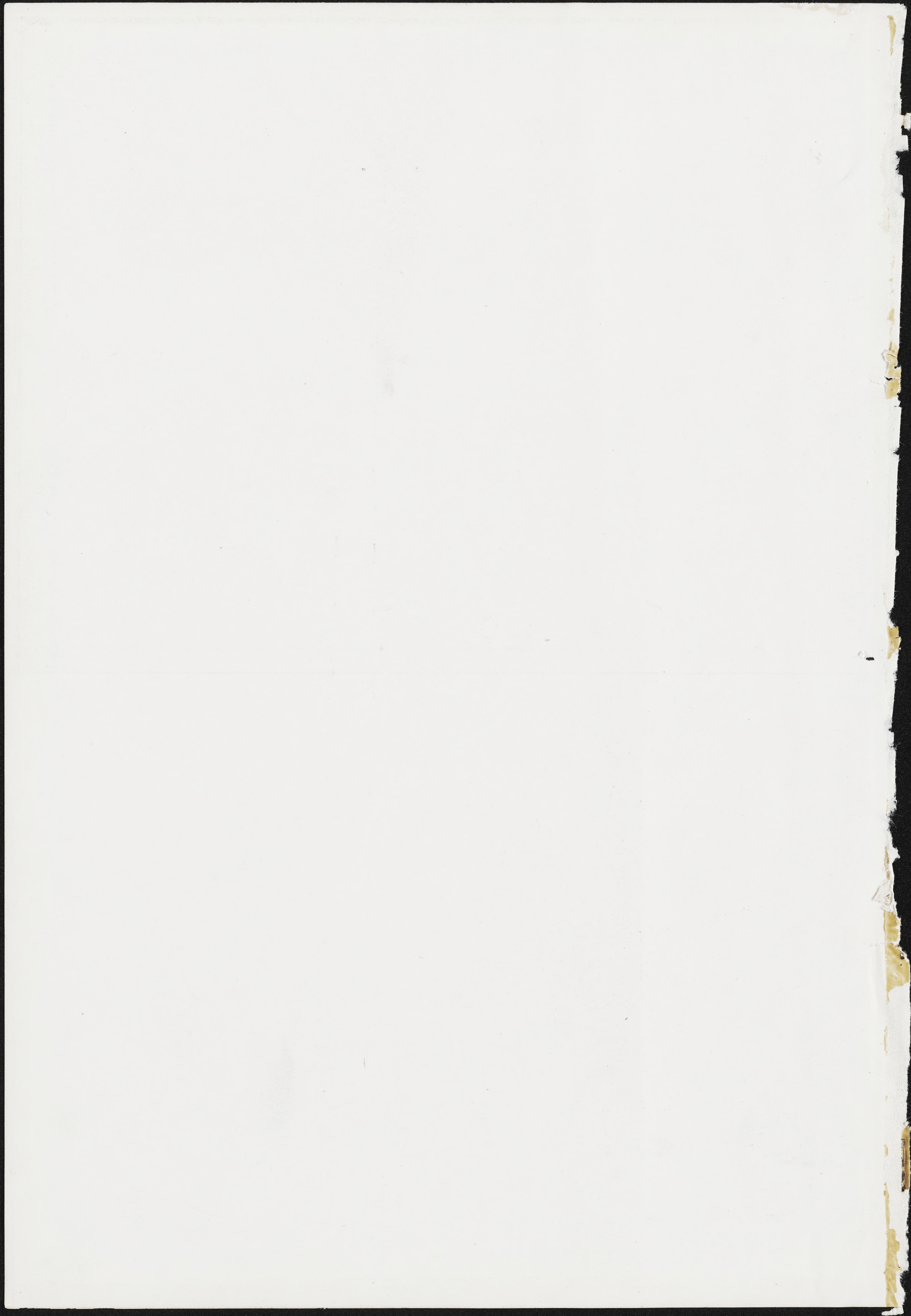






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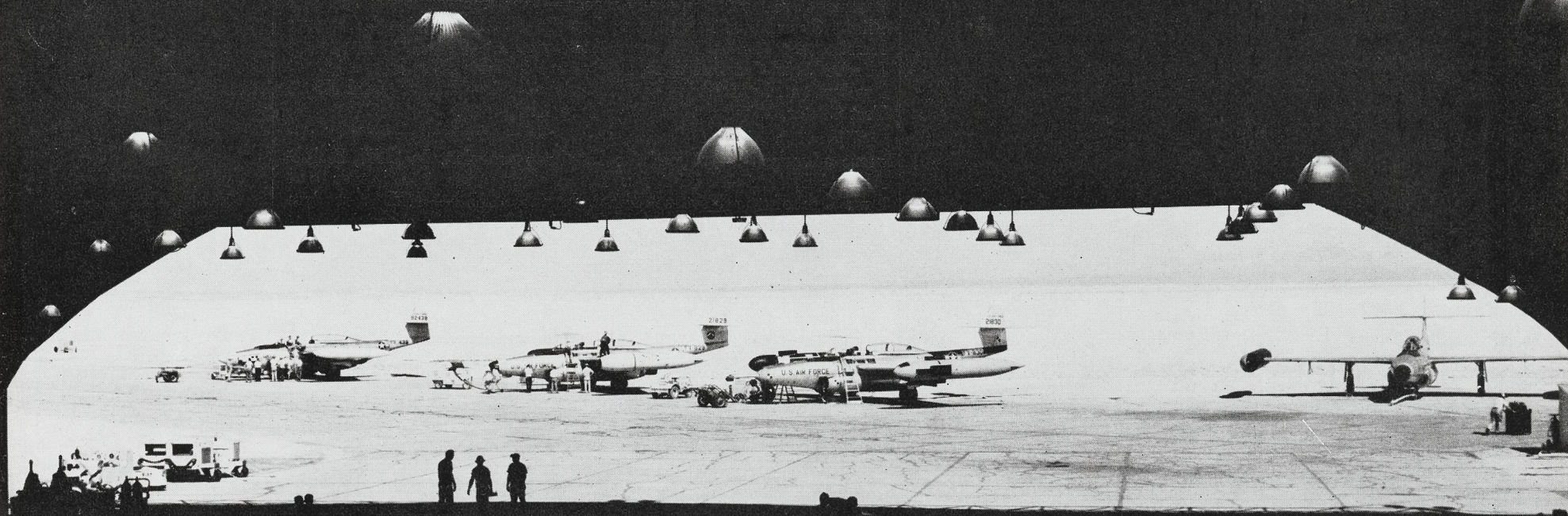






# SUN, SAND AND FLIGHT

A TRIP TO NORTHROP-EDWARDS IN PHOTOGRAPHS



**SUN** is bright, shadows are deep, activity is interesting at manned aircraft experimental flight test center, Edwards Air Force Base, Muroc Dry Lake, California, where Northrop has a facility. It's a place which not many Norcrafters see, but most would like to. It's also a photographer's dream — with security limitations. Seen here from inside Northrop hangar — the flight ramp, with Scorpion F-89s, series A, D, H and J. For a quick photo trip to Northrop's experimental center in the desert via experimental **NEWS** layout this issue, please turn the page and continue on from there.

## Presstime Flash—Norcrafter Hospital Group Insurance Benefits Increased!

**BECAUSE NORTHROP** products are of interest to the financial community, J. A. Hogle & Co., Los Angeles, recently installed this attractive display describing the USAF's Snark SM-62 and the T-38 supersonic trainer in its windows. Thousands of passersby stopped to learn more about Northrop. Viewing the exhibit—Miss Alice Peterson and Richard Rue of J. A. Hogle & Company.

Presstime flash to all personnel from John B. Clark, director, Industrial Relations—

Effective Monday, September 30, 1957, group insurance hospital benefits for dependents of Norcrafters will be increased from \$10 to \$12 per day, for maximum of 31 days room and board; other hospital benefits will be increased from \$200 to \$240.

For further immediate information, contact Group Insurance, extension 2586.

## The Snark to Go Operational—SAC

### COST-REDUCING K&T MACHINE PREVIEWED BY GENERAL IRVINE

Lt. Gen. Clarence S. Irvine, deputy chief of staff, Materiel, USAF, last week visited Northrop Division to preview, with President Whitley C. Collins, the giant new cost-reducing Kearney and Trecker numerically-controlled profile milling machine just installed—first of its kind on the West Coast and first of three scheduled for Northrop.

Use of the new device by industry is part of the long-range plan of the Air Materiel Command to obtain advanced weapons systems more economically.

At Northrop, where economy of operation is getting top priority attention by management, the new machines will be employed in major production programs such as Snark SM-62 intercontinental guided missiles, T-38 supersonic trainer aircraft, and important sub-contract work.

Other key members of previewing party included—Robert R. Miller, vice president and general manager, Northrop Division; and R. R. Nolan, vice president, Manufacturing, Northrop Division.

United States Air Force announcement to the world last week:

Slated for activation late this year—first operational squadron of intercontinental guided missiles, Northrop Snarks to be assigned to the Strategic Air Command.

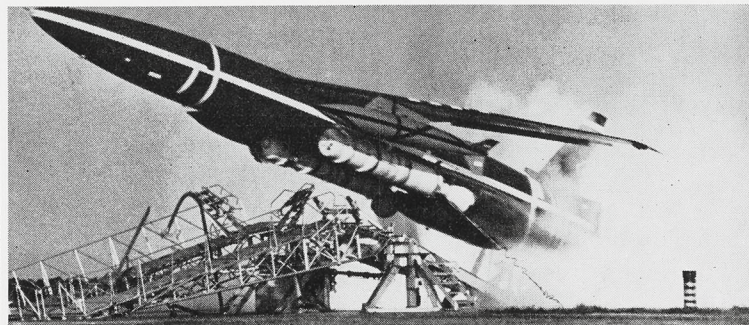
Strength—500 officers and men, with capability of launching nuclear warheads over oceanic, continental and intercontinental distances.

Commander—Lieutenant Colonel Richard W. Beck.

Site—undisclosed, but planned by SAC so that, in event of war, missiles fired would not pass over heavily populated areas.

Training—missile operation and maintenance crews are now in training at Northrop's Hawthorne complex where Snarks are manufactured; practice firings to be conducted from established range such as Patrick Air Force Base.

Note to taxpayers—Snarks can be guided back to base and landed after test flights.



**NORTHROP SNARK**, first intercontinental guided missile to be assigned squadron operational status with SAC.



# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, September 25, 1957



# NORTHROP-EDWARDS

Northrop Flight Department, Max Stanley, director, is the organization in charge of all manned aircraft flight activity for Northrop Division. Men and machines of this highly diverse department are located in many places—Experimental Flight Test and Flight Operations, Hawthorne; Los Angeles International Airport; Missile Test Facility and Eglin Air Force Base, Florida; Air Force Missile Development Center, Holloman Air Force Base, New Mexico; Production Flight Operations, Palmdale; and at Experimental Flight Test Center, Edwards Air Force Base, California.

The work of Flight touches upon or encompasses much of the more advanced activity of the Northrop complex. In **SUN, SAND AND FLIGHT** — with pix by Photographers Lou Meyer and Sam Orr of the Northrop-Edwards photo lab — **NEWS** readers this issue sample something of Flight activity via a quick sight-seeing trip to Edwards. See top half, each page, throughout issue.



**JACK FARLEY**, Northrop-Edwards base administrator, reporting to Max Stanley, Flight Department. Jack is man of two hats, also flies test aircraft, working closely with Experimental Test Pilots Nelson, chief, Chouteau and Wells.

**WHY THE BALLOONS?** Experimentation. Radar reflector is carried aloft, captive, for checking out radar on ground. Below, two "post-flights"—meetings held immediately after a flight when test pilots discuss, with key men at facility, results of flight. Shown, left then right, Experimental Test Pilots Hank Chouteau and Lew Nelson, recording — with Bob Graeber, Les Eisele, T. M. Shackelford, "Smokey" Wilson, Bob Reeves, Ken Peterson, Rollie Gately, Lee Miller, Gene Johnson and Hardy Jones. Test Pilot Jack Wells, at Holloman, not shown in photos.



## A Retirement Income at 65 Without Paying One Penny

The man was 35 years old when he walked into the Northrop Retirement Plan office, Ed Means in charge. A moment later, Ed was answering his question.

"Two hundred and fifty dollars a month at age 65 without paying a cent into the Company plan. That's the way it figures in your case on the basis of your present earnings."

"And what if I take out some supplemental and pay for that myself?" The young man looked seriously at Mr. Means.

"Well, of course that's another part of the story," continued Mr. Means. "You can build up your retirement income in a number of ways. One good way is through the Northrop supplemental retirement plan. Another is your personal investments. And of course you can count on Social Security, which in your case will already amount to another \$108 or so in addition to the basic Northrop \$250."

"In other words," advised the retirement administrator, "with a little extra effort and planning

on your part, you shouldn't have too much trouble programming a retirement income of better than \$500 monthly!"

The young man considered the matter, then asked another direct question. "I thought this retirement pay was peanuts. Didn't realize the way I am going now and without paying a cent, I was building up that kind of a nest-egg through the company. Why don't you publicize this thing more? It's a lot better deal than I realized!"

And so this story. Next Friday Norcrafters will be receiving their annual statements on retirement credits. All the information and instructions will be on each card so that each Norcrafter will be able to figure out his or her retirement income at 65 after continuous service with Northrop.

Watch for the cards, says Ed Means. And calculate your retirement income. You may be pleasantly surprised. If there are questions, contact Retirement Administration, extension 2679.

## LIST OF COURSES COMPILED AS AID FOR NORCRAFTERS

A wide-ranging list of courses available for management training and development was circulated to all departments last week. It is designed as an aid to all personnel interested in self-improvement through education.

Over 140 courses offered by eleven leading Los Angeles area schools and colleges are included in the compilation. The Management Training Section of Industrial Training Administration prepared the extensive list.

For information — call extension 2436.

## Noah's Snark

It is only incidentally relevant that Stephen, 6, is the son of Joyce Rogers, Northrop Public Relations. Here is what happened.

Steve and Mike, his brother, had just returned from one of the first days at school. Teacher, evidently, had been discussing the Bible in one of the classes. Overheard as the children's daily report unfolded at the Norcrafter family's dinner table . . .

"And Mom, you know what Jesus did? He told Noah to build a SNARK and put all the people in it!"

## Norcrafters Give \$41,589 Assist Through Nor-Aid

Unselfish helping hands, extended by Norcrafters through Nor-Aid, provided \$41,589.17 in timely assistance for fellow personnel during the past fiscal year. This was the amount granted to 234 Norcrafters.

A total of \$67,755.47 was received for Nor-Aid through designations, cash donations and allocations, from August 1, 1956, to July 31, 1957. Funds in the bank as of August 1, 1956, totaled \$18,791.98. Funds in the bank as of the end of the fiscal year were \$44,958.28.

Nor-Aid board of directors aim to build the reserve amount to \$50,000.00. This fund would be available in event of an emergency such as flood, fire or other happenings possibly involving several Norcrafters.

## SCIENCE MOBILE SPARKS INTEREST IN ENGINEERING

Helping to stimulate interest among school age youths in engineering fields is a unique project of the American Electrical Society. It's called "Science Mobile", a trailer equipped to introduce students to electronics, electricity, astronomy, meteorology, and mineralogy.

Norcrafter Lorne E. Bristol, general membership chairman for the society, reports that youth groups throughout the Southland are making use of the mobile unit.

Basic equipment in the trailer readily adapts itself to utilization in the outdoor camps. Equipment includes: weather station instruments, a mineral survey unit, telescope, radio kits, electrical kits and an amateur radio station.

## NO LEFT ON RED AT CRENSHAW GATE

Norcrafters who approach gate 10 on Crenshaw from the south are cautioned not to turn left against the red stop light to enter lot D. California Highway Patrol officers have issued citations to violators.

Plant Protection officials state

that a green direction arrow permits a left hand turn from the south during traffic rush hours. At other times during the day, however, personnel must wait for the regular green go signal and a clear right of way.

# Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 1

Published every other Wednesday  
PUBLIC RELATIONS, NORTHROP AIRCRAFT, INC.  
A. V. CLINE, Director

CHARLES BRADFORD, Editor

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FORM 39-299 (9-4-56)  
YOUR ANNUAL RETIREMENT STATEMENT

THE NORTHROP RETIREMENT PLAN

NAME	YEAR ENDING	NO. OF MONTHS	CURRENT RETIREMENT CREDITS	TOTAL TO DATE
NORCRAFTER, J. J.	JULY 31, 1956	0000	95.92	236.84

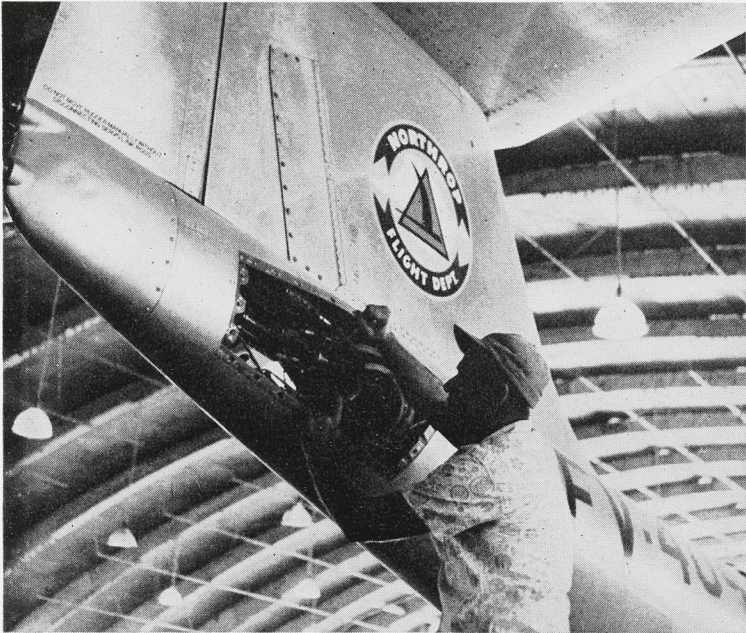
HOW TO ESTIMATE YOUR NORTHROP MONTHLY RETIREMENT INCOME AT AGE 65

NOTE: IF YOU HAVE LESS THAN ONE YEAR OF SERVICE WITH THE COMPANY, IT WILL BE NECESSARY TO DIVIDE "THIS YEAR" CREDITS BY THE NUMBER OF MONTHS OF SERVICE, THEN MULTIPLY BY 12 TO DETERMINE A FULL YEAR'S SERVICE.

NOTE: IF YOU HAVE LESS THAN ONE YEAR OF SERVICE WITH THE COMPANY, IT WILL BE NECESSARY TO DIVIDE "THIS YEAR" CREDITS BY THE NUMBER OF MONTHS OF SERVICE, THEN MULTIPLY BY 12 TO DETERMINE A FULL YEAR'S SERVICE.

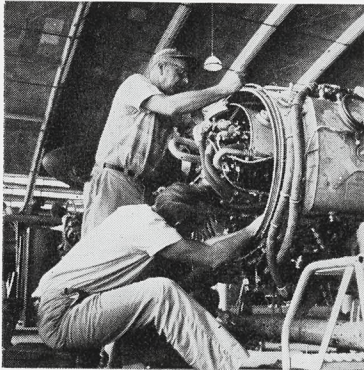
FOR YOUR ESTIMATED TOTAL RETIREMENT INCOME SEE REVERSE SIDE



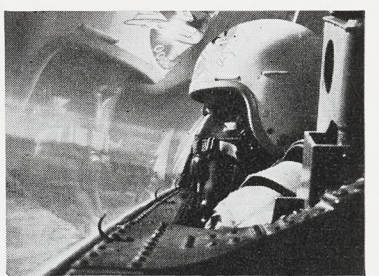


**GEORGE FELS**, one of crew chiefs who has been with Northrop longest, since 1941, here adjusts controls in tail of one of Flight Department's Scorpions at Edwards AFB.

**CHRIS CHRISTIANSEN**, Monty Montgomery work over an engine. Northrop, one of very first contractors to locate at Edwards, is situated at North Base—later is slated for move to new facility at the Main Base.

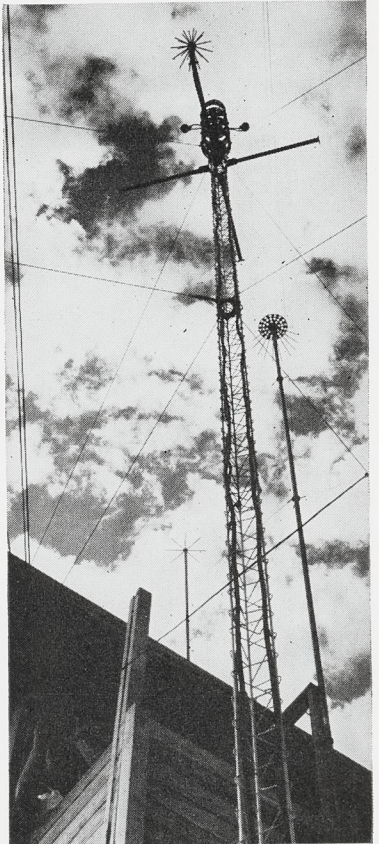


**NRC** leisure time pursuits are sparked by "Virg" Maniago, man of many recreational hats, left. "Pop" Moser, right, is Northrop institution — has friends everywhere, is 71 years old, and married 51 years!



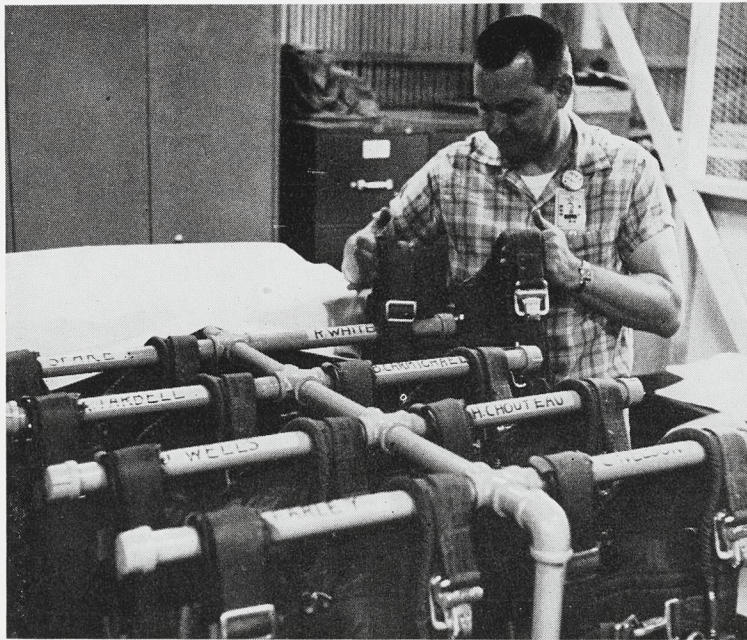
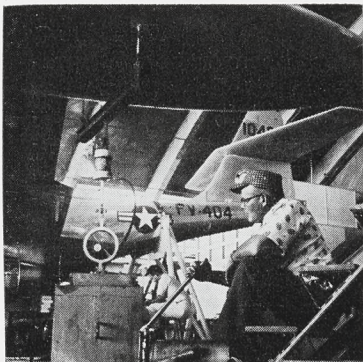
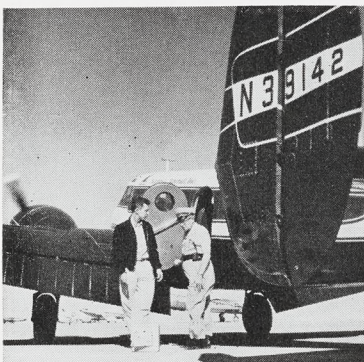
**MAJ. R. P. CHENOT**, chief, Operations and Training, Edwards FTC, mans chase plane, typical of close ARDC-Industry teamwork.

**CONTROL** tower at Northrop, Herb Floyd, operator.



**BETWEEN** facilities traffic of personnel aboard Company's Beechcraft or DC-3 is part of daily routine. Guard Frank MacRae, Norm Laney ready with mail.

**LOADS** program is a current emphasis at Northrop-Edwards. Ray Darnold takes a reading from the loads ring. Air Force customer must have exact measurements.



**PARACHUTES** and other flight gear for air crew members. Ed Blaty watches over 'em like golden eggs. Note names.

#### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
OLYMPIC & WESTERN, L.A. B. G. MITCHELL (5517-50833, Ext. 1578), RE 1-7462.

(Zone 2)  
FIGUEROA & GAGE OR FLORENCE, L.A. DAVID H. BOYKIN (5567-22942, Ext. 2565), PL 1-5500. 2-2  
BROADWAY & 46TH, L.A. MARTIN C. WALDON (5503-54181, Ext. 2434) AD 3-0824. 2-2

(Zone 5)  
FULLERTON AREA, (Car pool desired.) BILL JAMES (5411-16932, Ext. 2186), LA 5-9540. 2-5  
BELLFLOWER & SOUTH ST., Artesia. HARRY ABRAHAM (5515-53982, Ext. 2216), UN 5-5825. 2-5

(Zone 8)  
PACIFIC COAST HIGHWAY & WESTERN, Harbor City, (Car pool considered.) NORMAN R. BAILEY (5234-15678, Ext. 2466), DA 6-5566. 2-8

CRENSHAW BLVD. & PACIFIC COAST HWY., Torrance. EVERETT M. LEA (7734-53000, Ext. 2210), DA 6-9650. 2-8

(Zone 9)  
BINDEWALD RD. & CARLOW RD., Torrance. BEATRICE R. WAND (5336-15862, Ext. 2768). 2-9

MANHATTAN & PRAIRIE, Lawndale. ISADOR J. BLACKORBY (5563-54060, Ext. 575), OR 5-6462. 2-9

(Zone 10)  
HERMOSA AVE. & 119TH COURT, Hermosa Beach, LILLIAN DOTSON (5421-23709, Ext. 242), FR 4-1170. 2-10

(Zone 11)  
RAMONA & 120TH ST., Hawthorne. EARL CALKINS (5503-53556, Ext. 1385). 2-11

(Zone 12)  
OCEAN PARK BLVD. & 21ST ST., Santa Monica. (Car pool desired.) E. A. HATFIELD (3413-52305, Ext. 742), EX 6-9656.

(Zone 14)  
ADAMS & CRENSHAW BLVD., Los Angeles. SHASTER S. SWANN (5421-54176, Ext. 2242), RE 3-6212. 2-14

7:30 a.m. — 4:15 p.m.

MANCHESTER & HOOVER, L.A. BILLIE CARTER (9020-28075, Ext. 1604), PL 3-6636. 3-3

#### RIDES WANTED

7:30 a.m. — 4:15 p.m.

(Zone 4)  
WHITTIER BLVD. & VALLEY HOME, Whittier, (Car pool desired.) F. L. WADSWORTH (3838-35119, Ext. 2531) OWen 7-0845. 3-4

(Zone 5)  
HARVEY WAY & PALO VERDE, Lakewood. E. F. PIERCE (3121-53145, Ext. 716), GA 1-3208. 3-5

PARAMOUNT BLVD. & ARTESIA, Paramount. JAN RUSSELL (3420-51239, Ext. 1815), ME 3-1924. 3-5  
LONG BEACH & COMPTON BLVD., Compton. F. G. MOORE (8910-53828, Ext. 2671), NE 8-1076. 3-5

EL SEGUNDO BLVD. & PURCHIE, Gardena. JEANNETTE VAN BORTLE (9542-12032, Ext. 2761), DA 9-4914. 3-5

(Zone 7)  
LOMITA & WILMINGTON BLVD., Wilmington. ROBERT L. MUSIC (7511-46923, Ext. 2068). 3-7

(Zone 8)  
TORRANCE BLVD. & PALOS VERDES, Torrance. ROSEMARY T. MARTENS (7040-37951, Ext. 1204). 3-8

CRENSHAW & COMPTON, Gardena. BETTY BAHR (4200-13589, Ext. 1621), OS 6-8517. 3-8

(Zone 9)  
HAWTHORNE BLVD. & 169TH ST., Lawndale. JUNE WOLFE (USAF, Ext. 756). 3-9

(Zone 10)  
PACIFIC AVE. & 19TH ST., Manhattan Beach. (Would like another member for existing car pool of 3.) RALPH E. KNOWLES (3542-29594, Ext. 567) FR 2-9365. 3-10

HAWTHORNE & 136TH ST., Hawthorne. ETHEL ARNOLD (9513-46996, Ext. 2264) OS 6-6841. 3-10

(Zone 10)  
HAWTHORNE BLVD. & RAMONA, Hawthorne. EARLINE IRVIN (9513-53755, Ext. 2265). 3-10

GATES AVE. & PHELAN LANE, Redondo Beach. BEVERLY ZEPEDA (1421-47087, Ext. 1811), FR 6-6836. 3-10

TIMOTHY OR MANHATTAN & VAIL, Redondo Beach. (Moving to new Engineering Bldg. soon.) RENA JOHNSON (3313-43658, Ext. 1984). 3-10

#### RIDES WANTED

7:30 a.m. — 4:15 p.m.

FLAGNER & REDONDO BEACH BLVD., Redondo Beach. (Car pool desired; 3 or 4 riders.) LEONA B. EDDY (3142-44765, Ext. 2022). 3-10

(Zone 12)  
LINCOLN BLVD. & MANCHESTER, L.A. 45. (Ride wanted to new Eng. Bldg. beginning Oct. 1.) ROBT. VAN RENSSLAER (3420-29640, Ext. 444), OR 2-3358. 3-12

LINCOLN BLVD. & ROSE AVE., Venice. (Will join car pool or pay to \$3 per week to ride, or take riders.) HAROLD H. PETTIBONE (5980-53516, Ext. 2600), EX 9-2530. 3-12

(Zone 13)  
CENTURY BLVD. & INGLEWOOD AVE., Inglewood. (Ride urgently needed by Oct. 1.) VI BODDY (7520-27158, Ext. 625), OR 7-6948. 3-13

(Zone 13)  
CENTINELA & EDGEWOOD, Inglewood. DONALD C. THOMPSON (1810-29528, Ext. 2024), OR 2-4986. 3-13

(Zone 14)  
LA CIENEGA & PICO, L.A. AL A. HAYMAN (3473-21242, Ext. 2515), BR 2-0850.

BURBANK BLVD. & COLD WATER CANYON, No. Hollywood. (Car pool desired.) LEONARD LEVENTHAL (3010-53908, Ext. 1266), PO 1-2109. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 12)  
PRAIRIE & 116TH, Hawthorne. PAT CHAUDOIN (1422-53884, Ext. 696), OS 5-3725. 5-12

3:45 p.m. — 12:15 a.m.

LAKEWOOD & SOUTH ST., Lakewood. (Car pool considered.) BETTY L. HENDERSON (5353-16345, Ext. 2373), TO 6-7586.

4:45 p.m. — 1:15 a.m.

ROSE & JEFFRIES, Burbank. D. B. ANDERSON (7745-49061, Ext. 1571), TH 6-8576. 8-1

(Zone 2)  
SOTO & WABASH, L.A. SYLVIA KRAMER (9513-46893, Ext. 2266), FR 2-7426. 8-2

(Zone 5)  
STANTON & CANTERBURY WAY, Buena Park. ARTHUR L. GOLLWITZER (5503-18629, Ext. 2681). 8-5

STANTON & GARDEN GROVE BLVD., Westminster. (Moving to Westminster Oct. 25; would like to arrange for ride early.) MARILYN FRY (5352-53527, Ext. 2382), OR 2-3152. 8-5

(Zone 14)  
BEVERLY & LA BREA, Hollywood. ADOLFO VASQUEZ (9513-52221, Ext. 2264). 8-14

#### RIDES WANTED

Miscellaneous — Split Shift

(Zone 10)  
INGLEWOOD AVE. & MANHATTAN BEACH OR REDONDO BEACH BLVD., N. Redondo Beach. (Hours: 4:15 p.m.-12:45 a.m.) FAYE COMPTON (5339-53746, Ext. 2139), FR 6-1593. 10-10

#### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 5)  
FULLERTON AREA, (Car pool desired.) BILL JAMES (5411-16932, Ext. 2186), LA 5-9540. 12-5

CHAPMAN AVE. & 39 HIWAY, Garden Grove. (Hwy. 39 to Orangeforth, Woodruff, to Artesia.) T. M. ELROD (5501-17641, Ext. 2200). 12-5

LA PALMA & BROOKHURST OR SANTA ANA FREEWAY, Anaheim. (Will take 1 or 2 riders.) RAY FARMER (5234-53060, Ext. 2466), KE 3-3078. 12-5

DEL AMO & WOODRUFF, Lakewood. P. H. MAURER (5421-15210, Ext. 1856), TO 6-3349. 12-5

(Zone 8)  
PACIFIC COAST HIGHWAY & WESTERN, Harbor City. (Car pool considered.) NORMAN R. BAILEY (5234-15678, Ext. 2466), DA 6-5566. 12-8

(Zone 10)  
AVIATION BLVD. & REDONDO BEACH BLVD., N. Redondo. A. L. GAUDET (5222-53728, Ext. 1920). 12-10

(Zone 12)  
AIRPORT BLVD. & MANCHESTER, Westchester. CHUCK BERNHARD (5449-47582, Ext. 1366). 12-12

OCEAN PARK BLVD. & 21ST ST., Santa Monica. (Car pool desired.) E. A. HATFIELD (3413-52305, Ext. 742), EX 6-9656. 12-12

7:30 a.m. — 4:15 p.m.

(Zone 4)  
WHITTIER BLVD. & VALLEY HOME, Whittier. (Car pool desired.) F. L. WADSWORTH (3838-35119, Ext. 2531) OWen 7-0845. 13-4

(Zone 5)  
HARVEY WAY & PALO VERDE, Lakewood. E. F. PIERCE (3121-53145, Ext. 716), GA 1-3208. 13-5

(Zone 6)  
REDONDO BEACH BLVD. & WESTERN, Gardena. (Can take 5 or 6 passengers.) LUCIEN LAUZON (5920-42574, Ext. 2613). 13-6

(Zone 7)  
VERMONT & 182ND ST., Gardena. JEAN STUART (5950-46173, Ext. 2488), DA 4-2409. 13-7

#### RIDES OFFERED

7:30 a.m. — 4:15 p.m.

(Zone 10)  
FLAGNER & REDONDO BEACH BLVD., Redondo Beach. (Car pool desired; 3 or 4 riders.) LEONA B. EDDY (3142-44765, Ext. 2022). 13-10

(Zone 10)  
PACIFIC AVE. & 19TH ST., Manhattan Beach. (Would like another member for existing car pool of 3.) RALPH E. KNOWLES (3542-29594, Ext. 567) FR 2-9365. 13-10

(Zone 10)  
HERMOSA AVE. & 19TH, Hermosa Beach. (Via Pier, Redondo Bch. Blvd. & Prairie.) ROBERT E. BOWMAN (4700-31320, Ext. 1985), FR 2-1236. 13-10

(Zone 12)  
LINCOLN BLVD. & ROSE AVE., Venice. (Will join car pool or pay to \$3 per week to ride, or take riders.) HAROLD H. PETTIBONE (5980-53516, Ext. 2600), EX 9-2530. 13-12

(Zone 13)  
LA BREA & CENTINELA, Inglewood. (Via Eucalyptus & Hawthorne Blvd.) RICHARD J. DE FUSSI (8941-16635, Ext. 667), OR 7-6629. 13-13

(Zone 14)  
BURBANK BLVD. & COLD WATER CANYON, No. Hollywood. (Car pool desired.) LEONARD LEVENTHAL (3010-53908, Ext. 1266), PO 1-2109. 13-14

CRENSHAW & SANTA BARBARA, L.A. ARTHUR BENSON (3272-53255, Ext. 1274), AX 1-1874. 13-14

3:45 p.m. — 12:15 a.m.

(Zone 5)  
LAKEWOOD & SOUTH ST., Lakewood. (Car pool considered.) BETTY L. HENDERSON (5353-16345, Ext. 2373), TO 6-7586.

(Zone 14)  
FAIRFAX & BEVERLY, Los Angeles. P. FRIZLER (5509-19953, Ext. 2075), WE 9-1578. 16-14

#### Miscellaneous — Split Shift

(Zone 1)  
WESTERN OR CRENSHAW & MANCHESTER, L.A. (Can take 2 riders; \$2 per week; 7:15 a.m.-4:00 p.m.) ROSE TERESA TANNENBAUM (6002-53772, Fairfax 8-8410, Ext. 691), PL 9-7466.

(Zone 5)  
WILHEMINA & LEMON, Anaheim. (Can take 4 persons; 4:15 p.m.-12:45 a.m.) KENNETH C. GORLEY (9542-27752, Ext. 2229). 20-5

(Zone 9)  
PALOS VERDES DR. & HIGHWAY 101, Palos Verdes Estates. (Hours: 7:15-4 p.m., Mariposa.) PENELOPE M. LOHMAN (6001-53014, Ext. 406), FR 7-2302. 20-9

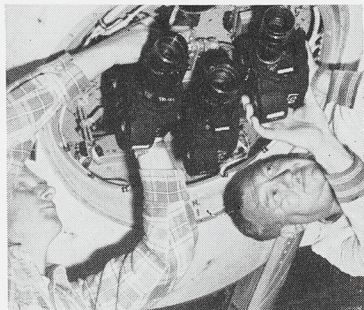




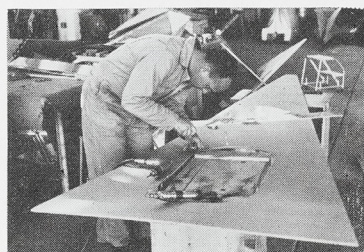
**THE LAKE**, reason for being at Edwards, is dry and provides a 14-mile long nature-made-and-maintained runway for use by experimental aircraft. Every man at Edwards appreciates each of those 14 miles, and certainly every pilot. Lake provides a big place to come home to safely. Seen here — Norcrafters Sam Orr at edge of Northrop paved area watching Chief Experimental Test Pilot Lew Nelson take off in a Scorpion J, fire truck at left on the alert. Lake bed is maintained in large part by rare seasonal rains which flood bed. Shallow sheet of water is then blown back and forth across lake by high winds until all dried out.



**JOHNNY O'CONNOR**, flight test engineer, instrumentation, sets up transit for bore-sighting an F-89 camera.



**CAMERAS** again, being installed for a test by Pete Pedersen, left, now at Holloman, and Lloyd Hagemeyer, now at Palmdale.



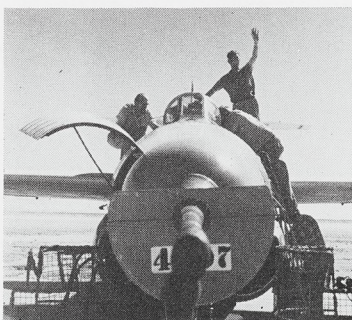
**TOW TARGET** for J firings being assembled by Milt Rogers, now at Holloman.



**BOUNDARY LAYER** study has been important program at Edwards. Roy Whites, left, and Bruce Carmichael, flight test engineers, check out body of revolution. Research, development in field offers great promise — increased performance, reduced costs.

**DISPATCHER'S** office is traffic center at facility; schedules both experimental flights and incoming, outgoing personnel traffic via Company passenger planes. Herb Floyd, center — with Lew Nelson, left; Lee Miller.

**PRE-FLIGHTING** an '89 — Ed Gerdovich, Rollie Gately, Ed Neary and Al Honeywell.



#### FOR SALE

STUDEBAKER, 1948 club coupe, UN 3-5196. A  
BUICK, 1952 Super Estate wagon, Dynaflo, \$675. HI 7-2220. A  
WASHER, ABC wringer, used 6 mos., \$50; RABBIT HUTCHES, CHICKEN COOPS, assorted. OR 4-5652. A  
MOTORCYCLE, 1956 Triumph TR6; FORD, 1950 V-8 tudor, new paint, springs, shocks, clutch. Box 112. A  
CAMERA, Polaroid land, model 80, \$45. DA 4-6140. A  
NASH, 1951 Statesman 2-door, Overdrive, \$225. OR 2-4844. A  
DIVAN, \$10. FR 6-2269. A  
TV CHASSIS, 12 1/2" Emerson; AM-FM RECEIVER, push-pull output, \$10 each. DA 9-5329. A  
CAR BATTERY, Allstate 6-volt, 9 mos. old, 24 mos. guarantee, \$8. OR 4-0455. A  
STOVE, 4-burner Pan-American, new Shaw oven controls, timer, \$50. FR 7-1912. A  
CAMERA, Rolleiflex, case, flash gun, Tessar lens, never used. \$150. FR 4-5987. A  
DRAFTING TABLE, 40" adjustable; drafting MACHINE, \$65; saw, planer, sander accessories for 1/4 drill motor; 30"x12"x12" AQUARIUM, pump, heater, filter. OR 8-6701. A  
DINING ROOM SET, carved oak, natural finish, table, 4 chairs, buffet, china closet, child's brunswick school desk, chair, metal. \$75. DA 3-5419. A  
STUDEBAKER, 1950 Champion Starlight coupe, auto transmission, PL 4-1803. A  
LAND, 1/4 acre lot near reservoir in Rollins Hills, 120' frontage, \$10,500. DA 4-6492. A  
LUGGAGE TRAILER, 2-wheel. \$40. FR 4-4713. A  
BUICK, 1954 Super 2-door Riviera, Dynaflo, \$1225. EX 8-8365. A  
BOOKS, misc. technical electronics; EQUIPMENT, various, condenser-resistor checker, bar generator, powerstat, tube checker, meter, deci-log 10" slide rule. OS 6-8565. A

#### FOR SALE

HOUSE, 2-bedroom, blinds, drapes, carpeting, steel fence, disposal, laundry in 2-car garage, fruit trees. \$11,950. \$2000 down. FR 2-9051. A  
BUICK, 1954 Riviera hardtop, Dynaflo, \$1350. FR 6-8546. A  
REFRIGERATOR, Hotpoint deluxe, freezer chest, door shelves, 11 cu. ft., \$145. AX 3-5821. A  
SHOTGUN, 20 ga. single shot, \$25. FR 6-6836. A  
HAND MIXER, Oster, never used, \$10. OS 6-4449. A  
PIANO, Hamilton upright, ebony finish, leather upholstered, \$100. TO 7-0487. A  
DRAFTING BAR, 54" post parallel, hardware, \$15. Box 103. A  
STOP WATCH, Swiss, 1/10 second, rotation every 30 seconds, minute recorder, \$11. Box 102. A  
DACHSHUND, 16 weeks old, Champion sired, red male, \$50. OS 5-4994. A  
AIR RIFLE, Daisy Eagle, 850 shot, 2 power scope, \$7; 2-man mountain TENT, \$8. OS 6-6956. A  
MOTORCYCLE, 1954 Velo Scrambler, \$350. OS 5-5815. A  
DEEP FREEZE, Marquette 1955, 15 cu. ft. \$250. FR 9-8503. A  
MG, T-F 1500, 1955, \$300 for equity, bal. \$1290 in payments. EX 7-2573. A  
BOAT, 25' sedan cruiser. OS 5-8141. A  
BLENDER-OSTERIZER; LINENS, for king-size bed. OR 7-2400. A  
MISCELLANEOUS, TV, 17" table model, \$50; portable record player, Steelman, \$25; accordion, Hohner, 120 bass, \$49; blonde TV stand, \$7.50; Taylor-Tot, \$5. DA 3-1479. A  
LUGGAGE TRAILER 2-wheel, Sears-Roebuck, \$90. DA 3-2935. A  
TAPE RECORDER, \$75. DA 9-4604. A  
HOUSE, 3-bedroom, 1 1/2 yr. old, carpet, double garage, disposal, unfinished basement, \$13,500. FR 9-4549. A  
CRIB & MATTRESS, Baby-Line; maple HIGH CHAIR; Provincial COUCH; DINETTE set. DA 4-5112. A

#### FOR SALE

FLOOR LAMP, lightolier contemporary indirect. \$25. FR 5-2450. A  
TRANSMITTER AND RECEIVER, SCR 522, 110 volt, \$30; BC458(ARC-5) TRANSMITTER for 40 meters, \$8; Johnson 100 KC CALIBRATOR, \$10. FR 5-4271. A  
PANEL DOOR, used, 1 1/4", 32"x68", hinges, lock, \$5. FR 2-4263. A  
BINOCULARS, German, Steinheil, coated lens, center focus, case, \$75. TO 7-4910. A  
WONDER HORSE, child's, \$20; rocking CHAIR, \$7; THERMOSTAT for aquariums, \$7. FR 8-2941. A  
PHOTO EQUIPMENT, various, Federal 219 enlarger, dryer, cutter, trays, filters, \$35; Baby-Line CRIB, \$15; 42"x96" DRAWING BOARD, \$5. FR 5-0330. A  
BICYCLE, boy's 20" German built, \$15. Box 105. A  
TRUCK, 1956 GMC, \$1200. GL 4-5150. A  
BEDROOM SET, 5-piece blonde, dresser, night stands, \$50. FR 9-0718. A  
DINNER SUIT, man's, trousers, 31-31, white jacket, size 38, \$35. OR 2-3512. A  
BUTTON HOLE ATTACHMENTS, Singer, Famous; mens figure ICE SKATES, CCM size 9. FR 5-9648. A  
HOUSE TRAILER, 35' Pan, new California cabana 10'x23', furnished, near Northrop. Box 107. A  
BIKE, 20" 2-wheel, \$9. OS 5-9561. A  
DODGE, 1951 4-door sedan, \$375. FR 5-8087. A  
T-BIRD, 1956, Ford-O-Matic, removable port hole hard top, extras. DA 9-1677. A  
CHEVROLET, 1946 1/2-ton panel, with rack, \$285. GA 2-6025. A  
STUDEBAKER, 1951 Champion 2-door sedan. FR 9-3946. A  
CHEST, 4-drawer, modern, dark mahogany, \$15; TV ROCKER, wrought iron, \$12.50; umbrella CLOTHESLINE, \$12.50. DA 9-5609. A  
FORD, 1941 club coupe, \$75. HE 3-0638. A  
RADIO, 1957 GE transistor portable, earphones, Mercury batteries, AC-DC charger, case; HARDTOP, for Jaguar coupe, side plastic windows. Box 109. A  
FORD, 1931 model "A", \$20. PL 5-0752. A  
BOX SPRINGS & MATTRESS, double, \$50. TO 2-1469, 5-6:30 p.m. A  
ENGINE, 1951 Chevrolet, \$35; coffee TABLE, limed oak, step design, \$40. DA 9-1705. A  
HOLLYWOOD BED, double, box spring, innerspring mattress. \$25. DA 9-6634. A  
TYPEWRITERS, Barr Universal portable, case; noiseless Remington Rand, standard keyboards, \$37.50 each. FA 1-0020. A  
SAXOPHONE, alto, \$60; ceramic KILN, molds, green ware, \$100; prospector's portable SLUICE BOX, shaker type, \$25; specimens of Telluride GOLD ORE, from Victor, Colorado assay \$16,000 ton, \$1 each and up. OR 7-4614. A

#### FOR SALE

MERCURY, 1949, overdrive, new tires, brakes. FR 4-8542. A  
STOVE, 1951 Gaffers & Sattler deluxe gas, table top. FR 8-1103. A  
HIDE-A-BED; 9'x12' RUG; Admiral 21" TV console. LU 8-0548. A  
RANGE, Gaffers & Sattler, chrome top, fully automatic, \$175; Westinghouse tank type VACUUM CLEANER, \$40. DA 9-3900. A  
DINING ROOM SET, 9-pc., Avodire wood, includes glass table top & buffet top, pads, \$350. TO 6-7254. A  
DEEP FREEZE, 17 cu. ft. Coldspot, \$135. OR 2-8516. A  
HORSE, 9 yr. old mare, gaited, gentle, Western saddle, bridle, \$225 complete or will sell separately. TO 9-3496. A  
MIRROR, Barker Bros. 3'x4' traditional contoured ornate gold frame, plate glass, \$25. OS 6-5454. A  
CRIB, play pen combination, 3-year size, \$12. PL 6-7917. A  
HAVILAND CHINA, Rosalind; Duncan CRYSTAL, Melody; Wallace STERLING, Grande Baroque; youth BED, blonde. FR 9-5114. A  
DRAFTING MACHINE, Bruning, standard arm, 18" metal scale, \$75. AX 1-4648. A  
STENOGRAPHY MACHINE, LaSalle, near new, recently cleaned & oiled, stand, carrying case, \$80. OS 6-2154. A  
CAMERA, Photina 2 1/4x2 1/4, twin lens, reflex, f3.5 matched coated Steinheil lens, Prontor SVC synchronized shutter to 1/300 sec., case, \$25. OR 4-7528. A  
FORD, 1957 convertible, Ford-O-Matic, T-Bird engine, power windows. PL 7-0560. A  
GAS ENGINE, 4-cycle, 2 1/2 h.p. Briggs & Stratton, 4-1 gear reduction, \$35. PL 6-0684. A  
FURNITURE, for living room, den & bedroom, all or part. OR 2-4081. A  
TAPE RECORDER, Wilcox Gay model 5A, 2-speed, in factory carton, \$75. TE 5-5447. A  
SWING SET, child's, 3" tubular steel, 12' spread, swings, glider, bars, \$20; 1951 NASH Statesman 2-door sedan, 4 new tires, tubes, \$225; BABY BUGGY, top, double pad, \$15. FR 5-4642. A  
SAW, Black & Decker 7" heavy utility, \$25; Westinghouse 1/4 hp 24" electric FAN, \$20; Rickenbacker electro Hawaiian GUITAR, Magna amp., \$75; 3-hole rabbit HUTCH, auto. watering, \$4; Joseph Guarneriusfeci VIOLIN, very old, offer. PL 5-5288 before 3 p.m. A  
WASHER, 1956 GE Filter Flo, \$175. RE 4-1628. A  
DINING ROOM SET, ext. table, 4 chairs, buffet, \$25; end TABLES, lamp tables, \$12 each; LAWN MOWER, \$15; rotary power MOWER, \$30; wringer WASHER, timer and pump, \$15. EX 1-2086. A

#### FOR SALE

HI-FI, complete, Pilot AF 824 tuner, Garrard RC 80 changer, diamond stylus, United Transformer Corp. MLF amplifier, University 312 triaxial speaker, acoustical equipment cabinet, corner enclosure, ebony finish, \$400. FR 4-4140. A  
CLARINET, Selmar C/T, new, \$200. GR 8-8142. A  
ENLARGER, Mark 2, German lens & accessories, \$100; Aragus C4 CAMERA, 135mm, telephoto lens, filters, tripod, light meter, \$125 or all for \$200. Box 108. A  
DINING ROOM SET, maple, Lazy Susan style, \$75; 4 captain's CHAIRS, \$15 each. PL 3-8758. A  
TRAILER, 18', electric brakes. OR 7-8760. A  
RIFLE, Winchester 30-40 lever action sporter, \$35; VIOLIN, 3/4 size, bow, case, \$20; Scout UNIFORMS, Cub size 10, \$5; Girl Scout, size 14, merit badge sash, \$5. OS 6-1696. A  
CHEVROLET, 1957 4-door 210 station wagon. Poweralide, power brakes, steering, under coating. \$2750. DA 9-1913, 10 a.m.-2 p.m. A  
PLYMOUTH, 1948, \$85. DU 7-4011. A  
NASH, 1952 Rambler station wagon, \$550. Box 110. A  
BICYCLE, 26" boy's, \$15. FR 5-6695. A  
BEDROOM SET, modern; ABC WASHER. PL 9-0412. A  
ROTISSERIE, Roto-Broil; elec. STOVE, auto. oven control, timer; blonde drop leaf TABLE, BUFFET; glass topped book CABINET; LAMPS, table & floor; child's TOILET SEAT. TE 1-2973. A  
VOLKSWAGEN, 1953, sunroof, \$995. GA 3-1363. A  
CHEVROLET, 1952 Bel Air, offer. PL 2-9597. A  
CAR, \$50. DA 6-2124. A  
TRAILER, 27' Admiral, elec. refri., elec. brakes, newly painted. Box 113. A  
REFRIGERATOR, Coldspot, 10 years old, \$75. AX 4-0208. A  
MISCELLANEOUS, Lazy Susan, \$2.50; knife set, \$2; Eastman Kodak, \$2; dinnerware, \$2.50; stainless steel tableware, \$2; salad bowl, serving, \$1.50; cream and sugar, \$1.50; spice set, 2; carving set, \$2. GR 7-1539. A  
ARMY UNIFORMS, Army officer pinks & blouses, 2 sets, size 38 blouse, 32-33 pinks, \$12; 2 OD trousers, 4 OD shirts 15-34, summer woolen gabardine, 2 sets, \$8. OS 6-8444. A  
HI FI SET, Heathkit F.M. tuner, A.F.C. added, Heath amplifier, 20 watt, Heath speaker, \$100 or sell separately. AX 4-6235. A  
FORD, 1947, 2-door sedan. OR 4-3794. A  
CHEVROLET, 1955 2-door sedan, \$1295. OR 7-5969. A  
PLYMOUTH, club coupe, \$695. OR 2-7813. A

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

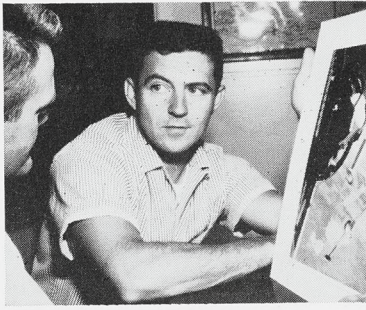
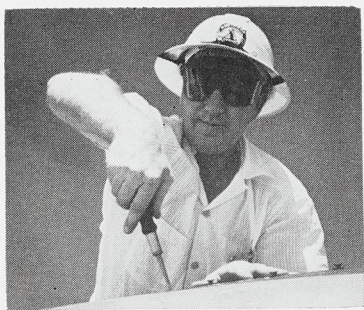
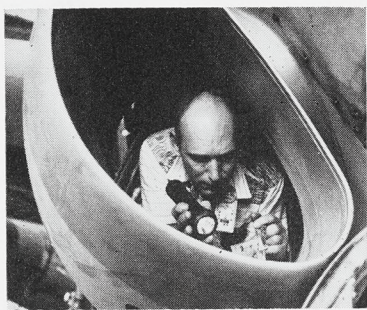
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Ads for agencies, commercial enterprises and private businesses are not accepted.

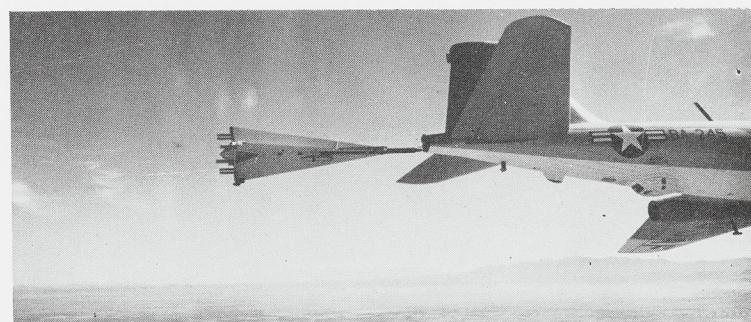
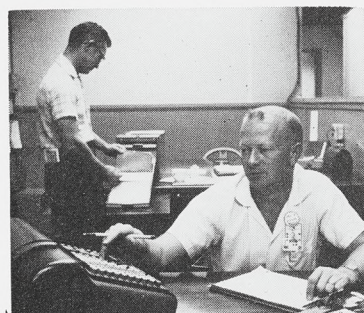
Deadline is noon Wednesday, one week before publication.





**LARRY GREEN**, supervisor, Experimental Flight Test, looks over **SUN, SAND AND FLIGHT** pictorial in the making, Frank Pierson of **NORTHROP NEWS** at left. Lou Weltz, Larry Wiskin, Kelly Burke, and other key men at Northrop-Edwards pitched in. Below — Northrop's tow target, stowed—B-57.

**EDWARDS** Norcrafters at work, five scenes above and to right — Guy Halverstadt inspects engine duct; Ray Darnold, Jim Mahan, loads; Shorty Soihl curled up for tail pipe repair; Red Bolin, sun-glare protected in glasses; Bob Reeves and Mel Louie figuring weights sheet.



#### FOR SALE

STOVE, 1951 Western Holly, ariddle, shelf. DA 9-5866. A  
 BUICK, 1950 Special, \$150. DA 4-3051. A  
 RUG, 10'x14' woven wool, \$50; 6'x9' fiber RUG, \$5. Box 115. A  
 CHEVROLET, 1955, fully equipped, leather upholstery, Powerglide, \$500 & 10 payments of \$58.90 mo. OR 4-9419. A  
 TV, 21" console; utility TUB, fixtures. OS 6-6903. A  
 DINETTE SET, mahogany, Duncan Fyfe drop leaf, 6 chairs, 1 with arms, extra leaves, seats 14, \$45. UN 3-3075. A  
 ENGINE, 1948 Ford V-8, \$25; 600x16 TIRES & wheels; 1946 Ford TRANSMISSION. PL 4-7891. A  
 GUNS, Winchester 70, 243, glass in-letted, Bushnell 6x scope, Buhler split rings, mount, ammo., dies, \$150; Mannlicher 30.06, new Henshold 4x scope, Buhler split rings, mount, ammo., dies, \$130; 410 shotgun, \$20; 357 Magnum S & W, ammo., dies, target grips, \$105. DA 3-2170. A  
 PACKARD, 1951 4-door sedan, recent overhaul, nylon recaps, \$350, terms. TO 6-3349. A  
 RANGE, Roper gas, ariddle, auto, oven control, high broiler. \$60. FR 5-6695. A  
 GUNS, 15 shot semi-auto, Mossberg 22 rifle, 4x scope; single shot Stevens over & under 22 and 410; 31 cal. Moisin-Nagant Russian Army rifle; all for \$40. Box 116. A  
 FURNITURE, couch, matching chair, wool frieze, traditional, rocker chair, 2 lamp shades. \$75. OS 6-8476. A  
 FREEZER, 17 cu. ft. Ben Hur, \$200. FR 9-8354. A  
 MOTORCYCLE, 1955 Triumph 200 cc, custom paint, seat. OR 2-1104. A  
 SCOOTER, 1956 Cushman Highlander, \$150. FR 9-6690. A  
 TRUCK, 1937 Dodge panel, needs battery. \$70. AX 4-4329. A  
 FORD, 1949 V-8 4-door sedan, \$100. OS 6-8583. A  
 CRASH HELMET, Anderson, goggles, size 7 to 7 1/4, \$20; girl's 26" BICYCLE, Roadmaster, \$15. PL 4-1803. A  
 STUDEBAKER, 1949 Commander 4-door sedan, overdrive, \$125. PL 5-0863. A  
 LOVESEAT, modern, foam rubber upholstery, \$35. FR 6-4156. A  
 BUICK, 1950 Super, Dynaflo, \$275. Box 118. A  
 PLYMOUTH, 1947 4-door, \$150. FR 9-6713 after 5 p.m. A  
 IRONER, Kenmore. \$65. OS 6-4757. A  
 GUN RACK, wall type, walnut, holds 5 guns. \$5; BASSINET, pad, folding leas, \$5; Super Zebco spin castina REEL, #22, never used. \$12; Beryllium copper bait castina ROD, \$5. PL 6-0015. A

#### FOR SALE

FORD, 1954 Customline V-8 4-door, Ford-O-Matic, \$935; walnut DINING ROOM SET; cedar CHEST; ENCYCLOPEDIA AMERICANA. OR 4-9321. A  
 FURNITURE, used, divan, \$25; couch, \$5; sofa bed, \$15; chaise lounge, \$15; 2 overstuffed chairs, \$25 each. FR 5-7810. A  
 FORD, 1954 Mainline, \$725. OR 1-9620. A  
 RADIO CONTROL for models, receiver-transmitter, 5 channels, no license required, \$100. OS 6-7226. A  
 END SUPPORTS for work bench, welded pipe angle iron construction, \$1.50 per end. PL 3-6315. A  
 DINING ROOM SET, carved walnut, 66" buffet, table, 6 upholstered chairs, leaves, requires large dining room, \$125; ball-bearing FILE CABINET, 4-drawer, legal size, dividers. PL 9-8257. A  
 DINING ROOM SET, mahogany, 6 chairs, buffet, \$75. OR 1-0517. A  
 PLYMOUTH, 1952 Cranbrook 4-door, \$425. FR 4-8732. A  
 HOUSE, 3-bedroom, Redondo, vacant, near schools, shopping, \$10,500. PR 4-6309. A  
 TV, 17" Tele-King console, \$40; RECORD PLAYER, Webcor 3-speed, attach to TV outlet, \$30. GA 1-1984. A  
 RANGE, Westwood, ariddle, oven, thermostat. VE 8-4918. A  
 RADIO, Zenith transoceanic portable, \$60; Hamilton Beach MIXMASTER, attachments \$15; Knapp Monarch BLENDER, \$15; Aras 35mm PROJECTOR, \$15; Retina #1 CAMERA, 35mm., \$15. TE 3-2984. A  
 MG, 1955 TF 1500, wire wheels, extras. OL 4-8932. A  
 PONTIAC, 1946 2-door, \$100. OR 3-4206. A  
 WASHER, Speed Queen wringer deluxe, \$20. FR 9-8033. A  
 BEDROOM SET, springs, mattress, vanity, mirror, chest, \$40; single BED, box springs, mattress, \$10; oak dining TABLE, 4 chairs, \$10. FR 6-6020. A  
 JEEP, 1948, water and gas cans, racks, free wheeling hubs, \$675. EX 8-0500, 10-4 p.m. A  
 PONTIAC, 1948 convertible, new rubber, \$100. EX 1-4303. A  
 CROSLY-AEROJET, inboard Marine, 26 1/2 h.p. conversion, \$275. FR 4-2190. A  
 DINETTE SET, small mahogany, buffet, \$60. PL 5-6648. A  
 DRESSER, antique Mid Victorian marble top, \$100; Edison cylinder PHONOGRAPH, early 1900 model, 45 cyl. records, \$75. DA 4-6584. A  
 LOT, 70'x160', level, near Rocky Point Estates, Palos Verdes. OR 1-4361. A  
 CAMERA, 2 1/4x3 1/4 Speed Graphic, accessories, case, \$185; solar ENLARGER and misc. darkroom EQUIPMENT, \$75. DA 9-6894. A

#### FOR SALE

PUPS, Weimaraner, 2 1/2 months, Von Gaibera champion stock, A.K.C., \$75. OS 5-6263. A  
 MOTORCYCLE, 1957 Zundapp, 250 cc, Class C racing tires, \$400; RCA TV, stand, antenna, \$30. TO 7-9504. A  
 DOUBLE BED, head & foot boards, box spring, mattress, \$20. HO 5-1380. A  
 TRAILER, teardrop, aluminum exterior, sleeps 3, stove, water tank, hand pump, \$250; 21" TV, mahogany console, \$80; K&E Paragon DRAFTING MACHINE, latest model, 12" & 18" plastic scales, \$70. FR 6-5656. A  
 BOOKS, 10 vol. Book of Popular Science, \$15; 7 vol. Lands and Peoples, \$10; 18 vol. Columbia University Course in Literature. \$15. FA 8-6604. A  
 FURNITURE, French Provincial living room set, bedroom & dining room set. PL 9-1392. A  
 BABY BUGGY, Welch, waterproof mattress, hood. \$20. PL 4-1803. A  
 PHOTO ENLARGER, complete, \$45; WONDER HORSE, child's spring, \$15; 3 large cardboard packing BARRELS, tight sealing covers, Bekins, \$5 all or \$2 each. PL 4-0900. A  
 HOUSE TRAILER, 20', refria., stove, \$200; CAGES, 2. rabbit or chinchilla, \$5. OR 1-2776. A  
 GRAND PIANO, Del Lyon Healy, bench, take over payments, \$34 mo. UN 3-0079 before 2 p.m. A  
 MERCURY, 1946 4-door sedan, recent overhaul, new headliner, \$150. DA 9-1705. A  
 PONTIAC, 1951 2-door sedan, \$350; 1946 CHEVROLET, club coupe, \$175. DA 3-1026. A  
 PONTIAC, 1952 2-door sedan, Hydra-Matic, \$525. TE 3-9757. A  
 OSCILLOSCOPE, Heathkit 0-7, assembled, complete, \$70. FR 6-3636. A  
 FORD, 1955 V-8, \$1050. DA 9-6923. A  
 RIFLE, 300 H&H Magnum by Remington, bolt action, open sights, used once, \$60. Box 122. A  
 BOAT, torsion bar trailer, 33 h.p. Scott-Atwater motor; 1934 Ford PICKUP, 15" wire wheels; two 1/4 midsize RACE CARS, torsion bar trailer to haul. LA 2-3292. A  
 WEDDING BAND, platinum, 9 diamonds, 4 points each, \$125; shortie wool COAT, maize, size 10. \$15. FR 2-4593. A  
 RUG, 9x12 hooked, pad, just cleaned, \$30; table-top gas RANGE, \$35. OS 5-9054. A  
 WASHER, ABC automatic, \$50; electric Philco REFRIGERATOR, \$100. PL 9-8257. A  
 HUDSON, 1949 2-door, \$75; wall electric HEATER, \$6. FR 4-2605. A  
 CAMP TRAILER, 1-wheel, folds compact; DINING TABLE, solid oak, 4 chairs, padded seats. DA 4-9033. A

#### FOR SALE

CHEVROLET, 1950, Powerglide, safety belt. \$275. Box 123. A  
 TYPEWRITER, Royal, elite type, 14" carriage. \$70. OR 7-8797. A  
 VACATION TRAILER, 14' aluminum, fully equipped, \$535; G.E. IRONER, \$65; power MOWER, \$55; apt. gas STOVE, \$15; sewing MACHINE, Kenmore, \$135; TV, 16" Motorola table, mahogany, \$65. OS 5-2051. A  
 FURNITURE, unfinished, bed, couch, table, chairs; rugs, all \$100. FR 4-0526. A  
 WASHER, Kenmore, wringer, \$20. UN 4-5349. A  
 CAMERA, 4x5 Crown Graphic, f/4.5 Ektar lens, extras complete, case, light meter, dark room equipment, \$200. FR 5-2640. A  
 MISCELLANEOUS, violin, typewriter, Easy ironer, mandolin, gas heater, vacuum sweeper. OS 6-6449. A  
 RANGE, Admiral electric, used 3 months, double oven, 2 broilers, automatic timer, \$225. PL 2-3713, 9-5 p.m. A  
 SUN LAMP, ultra violet ray, \$10; electronic ORGAN, \$150; 24" evaporative COOLER, \$12; folding garden COUCH, \$8. OS 6-3222, 10-2 p.m. A  
 GUNS, 30-30 Winchester Model 90, recoil pad, shells, kit, \$60; 380 Astrua auto & shoulder holster, 45. Box 121. A  
 TRAILER, 2-wheel, spare tire, tube, lights, side boards, 4'x5', \$30. Box 120. A  
 GAS HEATER, Hearthalo, 20,000 BTU. \$12. Box 119. A  
 LOT, El Segundo, 50'x142.5', \$5,000. Box 117. A  
 HI-FI & ELECTRONIC EQUIPMENT, tape recorders, tuners, amp., speakers, various, tech. magazines, books. FR 2-4281. A  
 WASHER, Easy Spin, \$35. OS 6-7219. A  
 RADIO-INTERCOM, RCA lic., 6 speakers, master, never installed, \$50. TE 2-9629. A  
 AQUARIUM, 5 gal., hood, light, pump, heater, ornaments, auppies, \$30. DA 6-3543. A  
 MOTORCYCLE, 1954 Harley-Davidson 74 O.H.V., full equipment, must sell, \$700. FA 8-0640. A  
 WASHER, Kenmore, wringer, \$35. OS 6-2373. A

#### RENTALS OFFERED

APARTMENT, large 2-bedroom unfurnished, individual aarage. TV antenna, disposal, water paid, near Northrop. OS 5-5242. E  
 ROOM, with bath, for 2 men, twin beds, near Northrop. OS 6-0346. E  
 DUPLEX, new 2-bdrm., disposal, aarage, heated pool, children o.k. EA 2-3059. E  
 ROOM, for 2 men, kitchen privileges, private entrance, everything furnished. OS 6-0623. E  
 HOUSE, 3 rooms & bath, furnished, utilities paid, \$60. Box 104. E  
 HOUSE, Harbor City, \$45. TE 4-4644. A  
 SLEEPING ROOMS, 2, men only, private entrance, share bath, off-street parking, Century & Prairie, \$30 month. OS 6-3160. E  
 HOUSE, 3-bedroom, unfurnished, stove & refria, only, near El Camino, \$115. DA 3-2935. E  
 APARTMENTS, 1 & 2-bedroom, unfurnished, near Northrop, \$77.50 & \$95. OR 7-4021. E  
 APARTMENT, 1-bedroom unf., Venice beach, adults, \$78. GL 4-5150. E  
 HOUSE, 2-bedroom furnished, Inglewood Ave. & Imperial, children & pets o.k. \$115. PL 9-9744. E  
 SLEEPING ROOM, share bath, private rear entrance, off street parking, Prairie & Century, \$30 mo. OS 6-3160. E  

#### RENTALS WANTED

  
 BACHELOR APARTMENT, near El Camino or Northrop, \$45-\$60. DA 4-8398. F  
 APARTMENT, 1-bedroom furnished, near Inglewood shopping, by November 1, \$65-\$70. PL 9-7466. F  
 HOUSE, 2-bedroom, unfurnished, near Northrop, couple & baby, to \$80. PL 5-0239. F  

#### CHILD CARE OFFERED

  
 CHILD CARE, any age, Hawthorne & Sepulveda area, licensed. DA 6-3282. G  
 CHILD CARE, licensed, 3 yrs. and up, fenced, hot lunches, naps, near schools, days or nights. OS 6-6566. G  

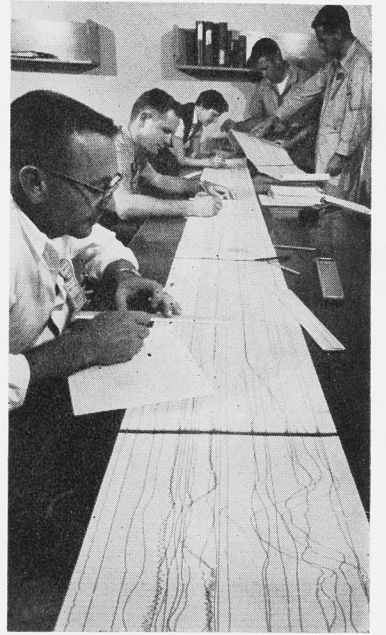
#### PERSONALS

  
 RIDERS WANTED, Sept. 29, to Chicago, Ill., share driving, expenses. LU 8-0549. E  
 RIDERS WANTED, 1 or 2, to New Orleans, La., Oct. 27 to Nov. 10, 1955 Pontiac, share expenses & driving. DA 9-5622. L  
 CARE FOR AGED, board and care for aged persons, private home, licensed. OS 5-1047. L  
 RIDERS WANTED, to St. Louis, Mo., around Oct. 5, will take 3 riders in 1956 auto, share expenses. OR 4-8322. L



# THE MEANS, THE END

AT LEFT THE MEANS, flight, and at right the product, data, of experimental work at Edwards. Long oscillograph paper at right with the busy people pouring over its myriad waving lines holds the answers obtained in flight test just completed. Foreground, then clockwise — Bev Penick, Gene Johnson, Trudy Collins, Lee Miller, Hank Chouteau. Besides Trudy, other Northrop-Edwardites on-distaff side include Bea Everett, Carol Elliott, Kitty Adams, Esther Schlotfeld, Marie Duke, Joyce Loughhead.



THIS IS THE PLACE, high over the Mojave Desert, where Northrop and many other contractors test improved versions of today's aircraft and the prototypes of tomorrow.



LOU MEYER, Northrop photographer, decked out in flight gear with sampling of cameras. Lou and Sam shot photos for this story.



SAM ORR, Northrop photographer, poses on dry lake bed, home sweet home for test pilots and backdrop for SUN, SAND AND FLIGHT.

## Original Toastmaster To be Guest Speaker At Club 212 Meeting

Original founder of Toastmasters International, Dr. Ralph Smedly, will be featured speaker at the installation dinner-party for Northrop Toastmasters Club 212, Saturday, October 5.

All Norcrafters and their friends are cordially invited to attend the installation and hear Dr. Smedly. Scene is the Cockatoo on Imperial. Social hour at 7 p.m., dinner at 7:30. Reservations are \$2.90, contact Personnel Activities.

## SURF FISHING CLUB TO HEAR STATE EXPERT

Norcrafters surf fishers will hear John Baxter of the Department of Fish and Game at their next meeting October 1. Mr. Baxter is in the Marine Resources Operations and will show slides with his talk.

Also on the program is a movie entitled "The Sardine Story". All members and friends are invited to attend the meeting at the NRC Clubhouse, 7:30 p.m.

## Sports Car Economy Run Open to All Norcrafters

Whether they drive a little foreign car or a big American model, most auto owners share a common interest in getting good gas mileage. This is the premise of an open invitation to all Norcrafters to participate in the upcoming NRC Sports Car Club economy run.

The event takes place Sunday, September 29 and originates at the Meadow Park Friendly Serv-

ice at corner of 230th and Hawthorne. Participating cars will be classed according to engine displacement and trophies will be awarded in all classes for best mileage.

To stimulate family participation, a special "sweepstakes" trophy for kiddies under 12 will be awarded. Navigators haven't been overlooked. They'll draw cards at each check point for the best poker hand.

First car is slated to roll out at 8:01 a.m. on a seven-hour round trip. Gas pump readings will be used in determining gas mileage.

Entry fee is \$1.75. Entries may be registered on the day of the run prior to first car roll-out.

## Mermaids Win Diving Trophy

Down among the corals at Laguna Beach went skin diver Lillian Kemble and team mate Ellen Rogers. Altogether, six two-woman teams stalked the briny deep. Event was the annual Women's Pacific Coast spearfishing competition.

When the ladies surfaced to compare their catches for the judging, mermaids Kemble and Rogers learned that four pounds, two ounces of fish was ample to win first place honors. Reason for the unusually light catch was murky, clouded water.

## NEWPORT HARBOR CRUISE PLANNED BY NRC SAILORS

Recollections of a successful Labor Day Cruise are stimulating excitement over the coming NRC Boat Club sail to Newport Harbor. The Anaheim Fleet is hosting the annual two-day affair, October 5 and 6.

Over 150 seafaring Norcrafters are expected in the turn out. An outdoor clam bake followed by an evening of entertainment will highlight the event.

## BOWLING OFFICERS

Officers of the Night Shift Bowling leagues were announced this week. John Tarlap guides "Ball and Chain" bowlers with Lee McGrew and Charlene Lutes.

Roy Saunders is president of the Machine Shop Trio on the Hawthorne Bowl alleys.

## NRC Good Time Table for October

For enrollment or information on activities listed above, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days), Jack Duer**  
Meet Wednesday, 6:30 p.m. Archery classes now in session.

**ART CLUB (days), Milton Maldonado**  
Meet in Annex every Thursday, 7:10 p.m. Models furnished by NRC. Newly formed sculpture class meets every Wed. 7:30 p.m.

**BIBLE STUDY, Roy Stahl**  
Plant 1—Daily, 11:30-12:15, Training Conf. Room, Tool Design Bldg.; 11:00-11:45, 5587 Conf. Rm.  
Plant 11—Mon. & Thurs., 12:15-1:00, Conf. Rm. 2.  
Plant 111—Daily, 12:15-1:00, Conf. Room 5.  
Torrance—Tues. & Thurs., 11:30-12:15, Bldg. K2 Conf. Rm.

**BOAT CLUB, Steve Sabo**  
Meet 1st Wednesday of month, 7:30. Night shift meets 3rd Thursday of month, 2:30 p.m. Water Ski Club Days meets 3rd Thurs., 7:30 p.m. Newport Beach Clambake Oct. 5 & 6; Colorado River Cruise Oct. 12 & 13; and Beachcombers Ball Oct. 26.

**BOWLING (days), Lloyd Forstrom**  
**BOWLING (nights), Charlie George**  
Winter leagues now formed.

**BOY SCOUTS, Stan Morris**  
Sea Scouts, Intermediate, Cub Scouts. All Norcrafters boys welcome.

**CAMERA CLUB (days), Steve Marsteller**  
Meet 1st & 3rd Wednesday.

**CAMERA CLUB (nights), Gene Beck**  
Meet 1st and 3rd Sat. of month, 8:15 p.m.

**FISHING (day and night)**  
Register all fish for NRC awards with

cards available at Personnel Activities.

**GEM & MINERAL CLUB (days)**  
Raymond Cole  
Mineralogy class now in session. Meet every Thursday, 7:00 to 9:00.

**GEM & MINERAL CLUB (nights)**  
Victor Lincoln  
Meet 1st and 3rd Wed. of month, 1:30 p.m.

**GOLF (days), Charles Pinegar**  
**GOLF (nights), Leo Baker**  
Individual practice for Christmas Tournament.

**GUN CLUB (days), Ron Reis**  
Meet 1st and 3rd Tues. of month, 7:30 p.m., Clubhouse. Meet 3rd Tues. of month at Centinela Pistol Range.

**MIXED CHORUS, Bill Porter**  
Meet every Tues., 7:30 p.m. All Norcrafters welcome.

**MODEL CRAFT CLUB, Jerry Greasby**  
Meeting 1st Monday of month.

**MODEL RAILROAD, Jack Wilson**  
Meeting every Thursday evening from 7 to 10 p.m. in Annex. Visitors welcome.

**PHILATELIC, Robert Van Rensselaer**  
Meet 2nd and 4th Mondays, 7 p.m.

**RADIO CLUB, Phil Kramer**  
Meet last Thursday of month in Annex, 7:30 p.m. Radio Code Class meets every Wednesday evening, 7:30 p.m. NRC's Station is W6VPZ.

**SKEET CLUB, Harold Bowers**  
Meet every other Saturday at Long Beach Dominguez Gun Club on Artesia Blvd., 10:30 a.m. October 5 & 19.

**SKIN DIVING (days), Ralph Gonzales**  
Meet 3rd Monday of month at 7:30 p.m.

**SKIN DIVING (nights), Lillian Kemble**  
Meet 3rd Wednesday of month, 1 p.m.

**SPORTS CAR CLUB, Bill Hanna**  
Meet 2nd Thursday of month, 7:30 p.m. Picture Rally Oct. 13th.

**SQUARE DANCING, Roy Jackson**  
Beginners class starting 2nd, 3rd, 4th, and 5th Sundays, Gardena Barn, 15016 Daphne St., Gardena.

**SURF FISHING, John Pawlicki**  
Meet 1st Tuesday of month, 7:30 p.m.; speaker from Calif. Fish & Game, Mr. John Baxter, October 1.

**TOASTMASTERS 212 (days), Jim Lynch**  
Meet every Thursday evening, 6:30 p.m., "The Cockatoo".

**TOASTMASTERS (days), Howard Cornelius**  
Meet every Tuesday evening, 6:15 p.m., "Kims".

**TOASTMASTERS (nights), Ray Grish**  
Meet every Thursday, 12:30 p.m., "Gondolier," corner of Imperial Highway and Prairie.

## FOR THE LADIES

**BOWLING (days), Joan Sittauer**  
**BOWLING (nights), Mary Minnaugh**  
Winter leagues now formed.

**GIRL SCOUTS, Helen Maupin**  
Mariners, Intermediates, Brownies. All Norcrafters girls welcome.

**TOASTMISTRESS, Vicki White**  
Meet in NRC Clubhouse Board Room 1st and 3rd Thursday, 7 p.m.



## Efficiency Means Action In Engineering Division

Top management at the Northrop Division has been hard at the assignment of improved efficiency. The Northrop News has already reported outstanding budget achievements for divisions and projects, achievements made possible by sound and realistic programs. For a report from Engineering, the people who actually put the \$ sign in design, Northrop News reporter went to George Douglas, vice president. Although the move to the new building was on all through the division, and many of the offices and areas were deserted, Mr. Douglas was still in his old office intent on the vast business in his charge.

**Mr. Douglas was asked the question: "In what specific ways is Engineering going about improving its efficiency to reduce costs?"**

"We are concentrating our efforts to obtain increased efficiency in about four main areas.

"In the first place, since wages and salaries make up a major portion of all engineering costs, we have been looking very carefully at the payroll. We have been giving very close scrutiny to the personal and individual efficiency of all our people. I can report to you that as a result of this scrutiny and the selective reduction of personnel which has followed, we have already made substantial improvements in this division's efficiency. By the time this phase of our efficiency drive is completed on November 1, it is expected that we will have selectively reduced our personnel by approximately 200. Also, those people who may leave by normal attrition generally will not be replaced."

**"What progress are you making in reducing other operating expenses?"**

"It is always difficult to realize real efficiency improvement in the non-labor area, but we are reducing costs where possible on at least three items there, too. Long distance calls. Travel. And paid absences. These things are really being given the once-over."

**"How are you currently doing when it comes to living within your overhead budget?"**

"I have just completed a report to Vice President and General Manager Bob Miller on just exactly that," said Mr. Douglas. "We were able to report to him that whereas on August 1, Engineering was operating at 94 per cent overhead budget realization, by September 1 we had improved that to 101 per cent. At latest reading last week, that percentage had moved to 106 per cent."

**"Could you tell us how Engineering plans for the long-range picture?"**

"From here on in this interview, I will be talking about what we are doing over the long haul.

"The benefits of education, of course, are intangible, but as you know, the Company, and particularly Engineering, is giving increasing emphasis to higher education. It is the Company's desire to upgrade the educational status of its engineers and other personnel. We are stimulating our people to keep up with the latest techniques relating to their jobs and our fields of interest. The Company backs this program in several ways, one of which is to pay a portion of the tuition.

"There is another facet to this, and it is very important. It should be the philosophy of any engineering organization to regularly recruit from the graduating classes of the universities, young engineers who show outstanding promise. Northrop is doing this, and will continue to do it as a general policy. It is one of the ways of helping to maintain a dynamic engineering organization."

**Mr. Douglas continued right on into point four.**

"Now, finally, there is one more big thing in our program, and we in Engineering realize we are fortunate in this. That is the new facility we have been moving into through the past weeks. There is no doubt in my mind that Engineering will get a shot in the arm and will be able to function more efficiently, thanks to the new building.

"Of course the Engineering building is just one of a number of new structures scheduled in the master plan approved by the Board of Directors. Other new facilities will follow, and the rate at which they follow will depend on just what we are talking about here—efficiency."

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, October 9, 1957

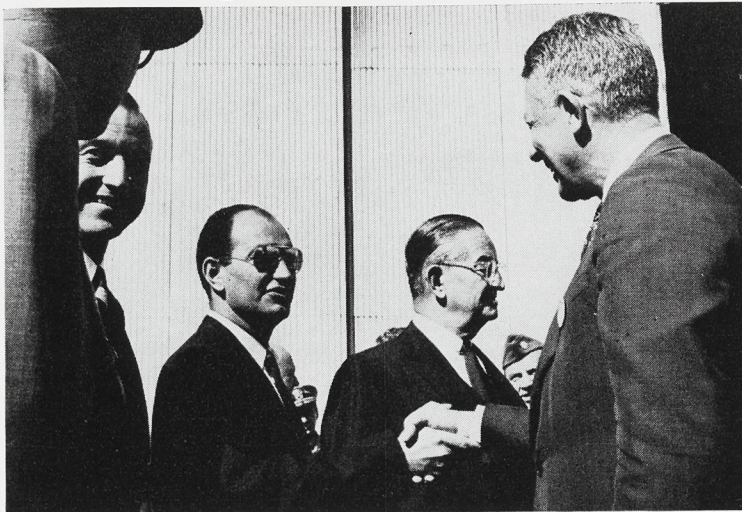
## HAWK - - - \$20,000,000

### ARMY GROUND-TO-AIR MISSILE CONTRACT AWARDED TO NORTHROP—WORK UNDERWAY

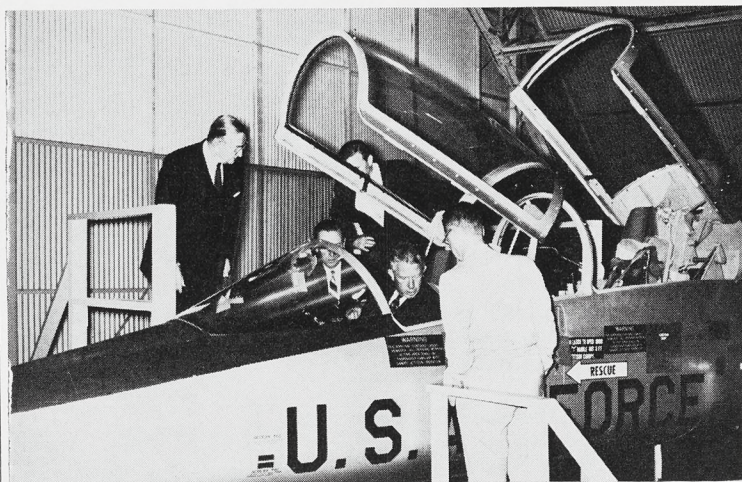
Contracts amounting to approximately \$20,000,000 have been awarded to Northrop Aircraft, Inc., major subcontractor to Raytheon Manufacturing Company, on the Hawk ground-to-air missile system for the U.S. Army Ordnance Corps.

This amount is for research, development and manufacture of Hawk airframe components and weapon system support equipment, according to announcement by Whitley C. Collins, Northrop president.

### Distinguished Visitors



**NEIL H. McELROY**, right, newly appointed to succeed Charles E. Wilson as Secretary of Defense of the U.S., effective today, visited Northrop. Extreme left is Brig. Gen. Carey A. Randall, USMC, military aide to the Secretary, one of several in Mr. McElroy's party, then Northrop leaders: Tom Jones, vice president, Corporate Development Planning; Dr. William F. Ballhaus (shaking hands), corporate vice president and general manager, Nortronics; and President Whitley C. Collins.



**MR. McELROY**, in cockpit of Northrop's T-38 supersonic trainer mock-up, was briefed on economy aspects of the T-38 and of the new N-156F jet fighter designed for NATO countries. Pointed up was light-weight, low cost concept. President Collins at left, with Vice President T. V. Jones, kneeling. Also with Mr. McElroy in photograph: Richard E. Horner, assistant secretary, Research and Development, DAF, seen behind canopy; and Oliver M. Gale, special assistant to the Secretary of Defense, back to camera.



**LT. GEN. CLARENCE S. IRVINE**, deputy chief of staff, Materiel, USAF, center, with Northrop Incorporated President Collins, right previews new Kearney and Trecker numerically controlled profiling machine just installed at Northrop—first on the West Coast and first of three scheduled for Northrop. Mack Duncan explaining.

Contracts for the program include appropriations for facilities, engineering services and procurement. Manufacture of the Northrop portions of the Hawk missile is underway at Anaheim. Engineering activity is being performed at both Anaheim and Hawthorne.

As major subcontractor to Raytheon, Northrop has responsibility for structural integrity and

(See photos, page 6)

aerodynamic performance of the missile, design and fabrication of major portions of the airframe, the mobile launcher, missile loader, pallet and reusable container.

Support equipment comprises about 70 per cent of the total dollar volume of Northrop work

(See HAWK, page 3)

## IAS Sponsors Flight Test Fellowship

Competition is open for a flight test engineering fellowship at Princeton University. Sponsor is the Institute of Aeronautical Sciences.

Norcrafters who wish to apply must meet the following requirements — be a U.S. citizen and have a bachelor's degree in engineering by June, 1958. The graduate fellowship is open to everyone who meets these requirements. There are no other restrictions.

The fellowship award has a total value of \$4700. First year grant is \$1500 plus \$600 for tuition. Second year renewal, upon satisfactory performance during the first year, brings with it (See SCHOLARSHIP, page 3)

## M-C MEMBERS TO DINE, DANCE AT BEVERLY-HILTON

The Bali Room at the Beverly Hilton, dinner, all-star entertainment, dancing to the Leighton Noble orchestra. This is the bill for the Northrop Management Club annual dinner dance October 19.

(See photo, page 2)

A capacity attendance of 300 couples is expected, reports A. H. Kendall, Management Club president. He says entertainment for the evening is tops. Skeets Minton, ventriloquist, emcees, Lois Ray dances, Ruth and Carl Carlsson do a unique juggling act, and Leighton Noble provides the dance music.





**FIFTEEN YEARS OF SERVICE**—The following Norcrafters were presented 15-year pins by Robert R. Miller, vice president and general manager of Northrop Division, recently: L. H. Black, H. M. Bladel, J. L. Buchanan, R. R. Butler, R. S. Collins, H. F. Connor, W. A. Cunningham, J. A. Donahue, B. J. Durbin, T. M. Falvey, L. M. Fox, R. F. Funder, R. C. Grace, J. H. Hagerman, J. W. Harris, Mrs. W. L. Hartwell, J. M. Hoffhine, H. D. Horne, E. B. Jackson, J. L. Klinefelter, G. E. Madsen, Miss C. M. McDowell, C. E. Menkee, L. Miner, Jr., C. D. Morgan, F. C. Mudgett, L. F. Newcomb, W. E. Nordling, Mrs. E. Y. Park, L. B. Parker, Mrs. H. B. Patapoff, G. H. Patchen, J. D. Pigford, C. A. Pike, R. C. Pontious, C. L. Pool, Mrs. A. F. Presba, W. J. Raven, G. P. Reeder, A. R. Russell, J. Santich, M. E. Sechrist, C. E. Slavin, K. L. Tary, Mrs. I. H. Thompson, R. B. Tompkins, Miss A. V. Voogd, C. L. Wiedmann, G. C. Wilson, Mrs. R. B. Yarter and G. M. York. Total 15-year Norcrafters to date—1095!

## IDEAS CAUSE ARGUMENTS IN NORTHROP'S PATENT OFFICE

At an unsuspecting instant the fragments of an idea fall into place. This may have happened after weeks of careful study or in a fleeting moment of discovery.

A penciled sketch is made to preserve the idea. Then a pondering—will it work?

It is tried. Not quite right; needs a slight change.

It is tried again.

This time it works! A problem is solved and a successful innovation is brought into being—an invention.

The new device is deemed valuable to Northrop; should be protected. Herbert E. Metcalf and his team of experts turn to the task. They are the patent people for Northrop, serving all Divisions of the Company.

The patent counsel orders a search to assure that no existing invention is duplicated. Once the way is clear, the office prepares

and files an application and prosecutes it to finality.

The activity of the Patent Office in prosecuting an invention uniquely parallels that of a lawyer arguing a case in court, but with one striking exception—all arguments and claims are expressed almost entirely via mail correspondence with the U.S. Government Patent Office. Research to avoid any infringement on previously awarded patents is a must and is the time consuming factor in this unusual process.

To discover any new patentable innovations, exhaustive searches of all Northrop engineering, research and development and manufacturing reports are performed continuously by the patent counsel staff.

The office administers the Northrop Patent Award Plan and reviews employee suggestions submitted through the Suggestion Award Program.

As an illustration of the variety of items which the office handles—Northrop has patented everything from a tiny tear-shaped hole to the intricate guidance system used in the Snark intercontinental missile.

The hole, about the size of the eye in a sewing needle, is an all-important feature of a valve used in the full-power hydraulic con-

trol system on the F-89 Scorpion. The patented tear-shaped holes provide hydraulic pressure for both sides of the main control lever and give the system stability.

Northrop holds patent rights on the Snark guidance system and a number of other components of the intercontinental missile.

"No boredom to this job," says Metcalf. "Something new every day."

He's been in the patent counsel business for 25 years. As a partner of Lippincott and Metcalf of San Francisco, he has worked on Northrop patents since the Company's start and continued in the same line after joining the Company in 1945. During World War II, as a colonel in the Corps of Engineers, he was assigned as a patent counsel on the Manhattan Project, the atomic bomb development program.

"The operation doesn't stop with our office," he quickly inserts in describing the job of handling new ideas and inventions. "We work right along with John Oliver of the Associated Products office on items that might be of interest in the industry."

(See Northrop News, August 14, 1957 issue, for details on Associated Products activities.)

## GENERAL CALDARA SEES SAVINGS OF MILLIONS—AF FLYING SAFETY

Norcrafters are an important element in the Air Force flying safety program. This was pointed up by Major General Joseph D. Caldara, USAF director of Flight Safety Research, during the recent USAF-Industry Conference on Aviation Safety Education.

Meeting with aviation industry representatives, General Caldara said, "Flying safety begins on the drawing board of the aircraft designer. And, it continues through everyone who has anything to do with the manufacture, operation and maintenance of aircraft."

The Air Force has set a goal to save \$100 million in 1958 by further reducing aircraft accidents. The present accident rate stands at an all-time low of 14 per 100,000 flying hours. By re-

ducing the rate to 11 or less \$85 million would be saved in aircraft alone.

To meet this goal, General Caldara and his staff pointed out that the help of all Norcrafters and the 800,000 aircraft industry workers is needed by the Air Force. Northrop engineering and production personnel can help considerably, they stated, by keeping safety consciousness uppermost in their minds.

Representing Northrop at the joint parley were Bill Rogers, assistant supervisor of Aircraft Publications; George M. Russell, general supervisor of Airworthiness; Ralph G. Cook, SM-62 Project Office supervisor; Oscar Graffious, Northrop representative to the AF Flight Safety Research Office at Norton AFB; and Marc Nault, Northrop News.



**ANTELOPE VALLEY 15-YEAR MEN**—General Manager Miller, center, went to Palmdale recently to present four men with their 15-year pins: G. L. Myers, Wm. Raikes, Charles Ross and F. G. Alvarez. Frank Alvarez, night shift, right, who shares-the-ride daily all the way from Fontana, created quite a sensation by appearing in a.m. for the pin presentation after having hitch-hiked all the way from Fontana. Got up at pre-dawn because his car pool did not go early enough. And Frank made it, too!

## Arch Wallen Appointed Northrop Factory Head

Arch Wallen has been appointed factory manager of Northrop Division. It was announced by Richard R. Nolan, vice president, Manufacturing. His appointment will become effective October 14.

Mr. Wallen is formerly a vice president of Century Engineers and Royal Jet, Inc. of Burbank, California. At Northrop Division, his primary function will be direction of the production team manufacturing the Snark SM-62 and other Northrop products.

The 48-year old executive began his aircraft career in 1937 at Douglas where he specialized in tooling, manufacturing and experimental work on airframes and missiles. He left Douglas as a tooling manager in 1954 and joined Century Engineers, Inc. as director of manufacturing.

Also announced was the ap-

pointment of J. S. Breneman as manager for Northrop Division Night Operations. In this capacity, Breneman will continue to manage and coordinate the night operations of all divisions and departments, reporting to the vice president, Manufacturing.

## M-C Gal



**LOIS RAY** — swing and sway. She is on the entertainment bill-of-fare, Management Club social, at Beverly Hilton next week. See story page 1 for details.

## CHARLES TAYLOR ELECTED PREXY OF PHOTO GROUP

Charles E. Taylor, a project engineer in the Experimental Flight Test section, has been elected national president of the Society of Photographic Instrumentation Engineers.

Taylor will serve during the 1957-1958 term which will include presentation of the organization's third annual national Exhibition in Los Angeles next year.

The photographic instrumentation men use special scientific cameras to make pictures of such instantaneous phenomena as atomic explosions, missile and rocket launchings and supersonic flight of jet aircraft. Often, in today's faster-than-the-eye world, a strip of film is the only available record of "what happened".

# Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 2

A NORTHROP AIRCRAFT INC. PUBLICATION  
Published every other Wednesday  
PUBLIC RELATIONS, NORTHROP DIVISION  
CHARLES BARR, Manager

CHARLES BRADFORD, Editor

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**RIDES OFFERED**

**7:00 a.m. — 3:45 p.m.**

(Zone 1)  
VAN NESS & 78TH PL., L.A. TED HER-  
ZOG (3413-30920, Ext. 742). PL 1-2784.  
12-1

(Zone 2)  
DENKER & 64TH ST., L.A. ART BLOOM-  
FIELD (5503-19810, Ext. 2387). PL 9-  
9851. 12-2

(Zone 5)  
DEL AMO & PARAMOUNT or DOWNEY,  
Lakewood. (Car pool considered.) DAVID  
T. LOPEZ (5445-17258, Ext. 2252). GA  
9-8264. 12-5

(Zone 7)  
ANAHEIM & AVALON, Wilmington. (Car  
pool considered.) AUSTIN L. BAYETT  
(5503-51347, Ext. 2434). TE 5-9309.  
12-7

(Zone 14)  
CRENSHAW & 79TH ST., Los Angeles.  
B. J. HUMMEL (5507-13797, Ext. 525).  
AX 5-1514. 12-14

**7:30 a.m. — 4:15 p.m.**

(Zone 1)  
FOOTHILL BLVD. & RAMSDALL AVE.,  
La Crescenta. M. L. DUNBAR (5700-  
31869, Ext. 2053). CHURCHILL 9-6305. 13-1

(Zone 3)  
MAIN ST. & COLDEN, Los Angeles.  
DOROTHY KANDLER (5980-34972, Ext.  
2600). PL 5-7112. 13-3

(Zone 4)  
MALVERN & WOODS, Fullerton. (Car  
pool desired.) J. E. CREASON (5110-  
53883, Ext. 1420). LA 6-4129. 13-4

(Zone 5)  
IMPERIAL OR ROSECRANS & PARA-  
MOUNT BLVD., Hollywood. (Car pool con-  
sidered.) E. PARKISON (3316-12916, Ext.  
2554). ME 3-5922. 13-4

(Zone 5)  
KNOTT & CRESCENT, Buena Park. (Car  
pool considered; to new Eng. Bldg.)  
HARRY HEWITT (3360-51090, Ext. 1889).  
13-5

(Zone 8)  
LA PALMA & MILLER, Buena Park. (Car  
pool desired.) B. E. LOVERIN (8920-  
32252, Ext. 1518). JA 7-4378. 13-5

(Zone 9)  
ARLINGTON & 174TH ST., Torrance.  
R. A. LEWIS (5970-27095, Ext. 2180).  
13-8

(Zone 9)  
WINLOCK RD. & DALEMEAD, Torrance.  
(Walteria area, car pool considered.)  
JOE REED (3482-21119, Ext. 1660). DA  
6-5558. 13-9

(Zone 10)  
HIWAY 101 & PIER AVE., Hermosa  
Beach. (Will take 3 riders.) C. F. MONIZ  
(5160-43550, Ext. 663). FR 4-9498. 13-10

(Zone 13)  
SANTA MONICA & WILSHIRE, Beverly  
Hills. J. M. ATKINSON (1810-29492,  
Ext. 2675). CR 6-3534. 13-13

(Zone 14)  
LA CIENEGA & RODEO RD., L. A.  
(Car pool desired.) E. M. ALTMAN  
(3544-52220, Ext. 2471). VE 7-1677.

(Zone 14)  
STOCKER & LA BREA, Los Angeles. (Car  
pool considered.) ARNOLD J. TUCKER-  
MAN (3473-53093, Ext. 2655). AX 3-  
7436. 13-14

**3:45 p.m. — 12:15 a.m.**

(Zone 2)  
BROOKLYN & SOTO, L.A. (Boyle Heights  
area.) JOE L. JIMENEZ (5568-53447,  
Ext. 1829). AN 2-7027. 16-2

(Zone 6)  
XEMINO & PACIFIC COAST HIGHWAY,  
Long Beach. (Near traffic circle.) DON  
RANDOL (5355-53841, Ext. 1445). HE 8-  
2075. 16-6

**4:45 p.m. — 1:15 a.m.**

(Zone 4)  
FLORENCE & GARFIELD, Bell Gardens.  
LOUIS DE MARCO (5406-47581, Ext.  
2220). TO 9-9596. 18-4

(Zone 5)  
WESTMINSTER & HARBOR BLVD., Garden  
Grove. (Will take 3 riders.) ARTHUR L.  
BURTON (5240-45341, Ext. 2530). JE  
1-2414. 18-5

**Miscellaneous — Split Shift**

(Zone 1)  
WASHINGTON & VERMONT, L. A. (Car  
pool considered. 12:45-7:30 a.m.) EDW.  
ZOUSSEL (5920-47662, Ext. 2612). 20-1

(Zone 10)  
EL SEGUNDO & CRENSHAW, Hawthorne.  
JACKIE SHAY (6150-39469, Ext. 3-581).  
20-14

(Zone 14)  
HOLLYWOOD & VINE, Hollywood. (Want  
drivers for existing pool, 4:15-12:45  
a.m.) R. E. KANTER (5940-44578, Ext.  
2661). HO 4-3326. 20-14

**RIDES WANTED**

**7:00 a.m. — 3:45 p.m.**

(Zone 1)  
MANCHESTER OR ARBOR VITAE AND  
CRENSHAW, Inglewood. (Need ride home  
only.) PAULINE WILLIAMS (7040-27133,  
Ext. 530). PL 5-1628. 2-1

**RIDES WANTED**

**7:00 a.m. — 3:45 p.m.**

(Zone 1)  
VAN NESS & 78TH PL., L.A. TED HER-  
ZOG (3413-30920, Ext. 742). PL 1-2784.  
12-1

(Zone 2)  
EXPOSITION BLVD. & 6TH AVE., L. A.  
JUAN M. GONZALEZ (5516-24304, Ext.  
533). RE 3-6162. 2-2

(Zone 3)  
FIRESTONE & NADEAU, L.A. LAURA M.  
WILLIAMS (5507-13861, Ext. 526). LU  
1-4006. 2-3

(Zone 4)  
IMPERIAL & COMPTON AVE., L. A.  
TOMMIE SANCHEZ (5508-19569, Ext.  
649). 2-4

(Zone 5)  
DEL AMO & ORANGE AVE., Long Beach.  
ROBERT A. GREEN (5587-53996, Ext.  
1381). GA 3-3230. 2-5

(Zone 5)  
EL SEGUNDO & SANTA FE, Lynwood.  
RUTH FUTRELL (5355-48760, Ext. 1445).  
NE 5-9166. 2-5

(Zone 5)  
DEL AMO & PARAMOUNT OR DOWNEY,  
Lakewood. (Car pool considered.) DAVID  
T. LOPEZ (5445-17258, Ext. 2252). GA  
9-8264. 2-5

(Zone 6)  
SO. VERMONT & 155TH, Gardena. EDNA  
JACKSON (5352-25560, Ext. 1453). DA 3-  
4641. 2-6

(Zone 7)  
ANAHEIM & AVALON, Wilmington. (Car  
pool considered.) AUSTIN L. BAYETT  
(5503-51347, Ext. 2434). TE 5-9309.  
12-7

(Zone 8)  
WESTERN & 225TH ST., Torrance.  
JULE BROZKA (5162-14699, Ext. 545).  
FA 8-5560. 2-8

(Zone 8)  
YUKON & 182ND ST., Torrance. BEVERLY  
MARKIN (5587-26903, Ext. 1381). DA  
9-4010. 2-8

(Zone 10)  
PIER AVE. & GRANT, Redondo Beach.  
FRANK M. GARCIA (5568-23770, Ext.  
575). FR 9-5031. 2-10

(Zone 13)  
SEPUVEDA & WASHINGTON BLVD.,  
Culver City. HAROLD L. BENNETT (5338-  
16561, Ext. 2138). VE 7-4237. 2-13

**7:30 a.m. — 4:15 p.m.**

(Zone 2)  
SANTA ROSALIA & AUGUST ST., L.A.  
KAY WALKER (4530-42901, Ext. 617). AX  
2-3172. 3-2

(Zone 4)  
IMPERIAL OR ROSECRANS & PARA-  
MOUNT BLVD., Hollywood. (Car pool con-  
sidered.) E. PARKISON (3316-12916, Ext.  
2554). ME 3-5922. 3-4

(Zone 4)  
IMPERIAL & NORMANDIE, L.A. ESTHER  
FOSTER (9542-51266, Ext. 2228). 3-4

(Zone 5)  
MALVERN & WOODS, Fullerton. (Car  
pool desired.) J. E. CREASON (5110-  
53883, Ext. 1420). LA 6-4129. 3-4

(Zone 5)  
LA PALMA & MILLER, Buena Park. (Car  
pool desired.) B. E. LOVERIN (8920-  
32252, Ext. 1518). JA 7-4378. 3-5

(Zone 5)  
KNOTT & CRESCENT, Buena Park. (Car  
pool considered; to new Eng. Bldg.)  
HARRY HEWITT (3360-51090, Ext. 1889).  
3-5

(Zone 8)  
SEPUVEDA & KATHRYN, Torrance. ELI-  
ZABETH RODINA (4200-53774, Ext. 642).  
3-8

(Zone 9)  
HAWTHORNE & TORRANCE BLVD., Tor-  
rance. (Ride urgently needed.) C. M.  
SULLIVAN (5900-21637, Ext. 2163). FR  
6-6062. 3-9

(Zone 9)  
WINLOCK RD. & DALEMEAD, Torrance.  
(Walteria area, car pool considered.)  
JOE REED (3482-21119, Ext. 1660). DA  
6-5558. 3-9

(Zone 10)  
EL SEGUNDO & INGLEWOOD, Haw-  
thorne. LOIS HANSEN (4200-54390, Ext.  
2121). OS 5-9689. 3-10

(Zone 10)  
PIER & PROSPECT, Hermosa Beach. ELI-  
ZABETH DELACY (5141-44063, Ext. 1342).  
FR 9-7137. 3-10

(Zone 10)  
MANHATTAN BEACH & HIGHLAND AVE.,  
Manhattan Beach. WILLA HOFFZIMMER  
(5141-52256, Ext. 1342). FR 4-0573. 3-10

(Zone 12)  
LA TIJERA & SEPULVEDA, L.A. BARBARA  
BANDHOLTZ (3310-52210, Ext. 1984). OR  
4-8260. 3-12

(Zone 12)  
LA TIJERA & SEPULVEDA, L.A. LUCILLE  
SHIFKY (5120-52206, Ext. 495). OR  
4-8260. 3-12

(Zone 13)  
PRAIRIE & 108TH STREET, Lennox. JULIE  
JONES (8910-39198, Ext. 2671). 3-13

(Zone 14)  
LA CIENEGA & RODEO RD., L. A.  
(Car pool desired.) E. M. ALTMAN (3544-  
52220, Ext. 2471). VE 7-1677. 3-14

(Zone 14)  
STOCKER & LA BREA, Los Angeles. (Car  
pool considered.) ARNOLD J. TUCKER-  
MAN (3473-53093, Ext. 2655). AX 3-  
7436. 3-14

**RIDES WANTED**

**3:45 p.m. — 12:15 a.m.**

(Zone 6)  
XEMINO & PACIFIC COAST HIGHWAY,  
Long Beach. (Near traffic circle.) DON  
RANDOL (5355-53841, Ext. 1445). HE 8-  
2075. 6-6

**4:45 p.m. — 1:15 a.m.**

(Zone 9)  
HAWTHORNE & TORRANCE, Torrance.  
ROBERT ANDREWS (5353-53878, Ext.  
1868). FR 4-9758. 8-9

(Zone 10)  
HAWTHORNE & 137TH ST., Hawthorne.  
MARIE EVERLY (5352-37825, Ext. 1565).  
OS 6-7586. 8-10

**Miscellaneous — Split Shift**

(Zone 1)  
WASHINGTON & VERMONT, L. A. (Car  
pool considered. 12:45-7:30 a.m.) EDW.  
ZOUSSEL (5920-47662, Ext. 2612). 10-1

(Zone 5)  
VAN NESS & 135TH ST., Gardena.  
(4:15-12:15 a.m.) JAMES STEIN (5920-  
54177, Ext. 2612). DA 3-4814. 10-5

(Zone 5)  
OLIVE OR COMPTON & ATLANTIC,  
Compton. (Will return to work on Oct.  
14). MELBA L. BLAGG (6630-44129, on  
leave), NE 5-0685. 10-5

(Zone 12)  
VENICE AREA. (4:15-12:45) CLINTON G.  
GRAVES (5950-51910, Ext. 2488). EX  
9-1474. 10-12

(Zone 12)  
INGLEWOOD AVE. & 104TH ST., Ingle-  
wood. (6 a.m.-2:30 p.m.) PAUL G. VOLK-  
MAN (4520-52280, Ext. 1216). OR  
7-1740. 10-12

(Zone 14)  
HOLLYWOOD & VINE, Hollywood. (Want  
drivers for existing pool, 4:15-12:45  
a.m.) R. E. KANTER (5940-44578, Ext.  
2661). HO 4-3326. 10-14

**Army Hawk**

(Continued from page 1)  
on the Hawk project.

Northrop has been engaged in  
work on the Hawk for Raytheon  
since mid-1954. Design and de-  
velopment stages have proved suc-  
cessful and production activity is  
underway. Flight testing of the  
Hawk has been in progress since  
July, 1955.

Newest U.S. Army missile, the  
Hawk makes low-flying, high-  
speed attack aircraft vulnerable  
targets and helps close the gap  
in America's air defense. The  
new missile carries a lethal, mod-  
ern war-head.

Field use is simplified as a re-  
sult of the integrated design of  
launcher and missile loader. The  
loader picks up three of the 16-  
foot long Hawks from a special  
transport and storage pallet and  
placement of the missiles on the  
launcher is accomplished with  
unusual speed and reliability.

The entire system employs a  
light-weight, compact design con-  
cept. The launcher can ford  
streams up to 30 inches in depth  
and if necessary could even  
float because of its lightness and  
water-tight sealing. The loader is  
self-propelled and highly maneu-  
verable, capable of negotiating  
rough or muddy terrain.

Central direction and respon-  
sibility for development of the  
Hawk was carried out by Raythe-  
on Manufacturing Company  
under the technical supervision  
of the U.S. Army's Redstone Ar-  
senal for the Boston Ordnance  
District.

**Scholarship**

(Continued from page 1)  
\$2000 and another \$600 tuition.

Winning candidates will join  
several Air Force and Navy test  
pilots in a special two-year pro-  
gram at Princeton providing a  
foundation of advanced technical  
training in flight test.

Application forms may be ob-  
tained by a request in writing to:  
Flight Test, Institute of  
Aeronautical Sciences, 7660 Bev-  
erly Blvd., Los Angeles 36, Cali-  
fornia. Applications must be re-  
ceived before March 1, 1958.

**Norcrafter Lamkin-  
His Hands too Big?**

He played "I'll Take You  
Home Again, Kathleen."

People from the offices at LAX  
gathered around for a moment to  
listen while they waited for the  
shift change.

He had taken his badge off.  
"It vibrates to the music," he ex-  
plained, then he went on to ex-  
plain the violins. This was Officer  
Glenn Lamkin, guard at LAX,  
age—71; weight, 250 pounds;  
hair, grey; eyes, grey and twin-  
kling; hands, big.

"This is to be a story about  
a man who builds violins in his  
spare time," said Aireporter.

"My mother wanted me to play  
the violin," said big Mr. Lamkin.  
"But my hands were too big. So  
I build them instead."

"What you just played sounded  
fine," said Aireporter.

He smiled modestly. Then he  
told about violins. "This one,"  
he said, "is made of myrtle wood  
from Oregon. This wood makes  
beautiful gun stocks, too. Now  
these two are made of spruce  
which comes from a special viol-  
in forest that all fine violins  
come from. Up where Italy and  
Switzerland and Austria meet."

"And the finish?"

"The finish is many coats of  
a special violin varnish put on  
with a red ox hair brush, taken  
down each time with pumice and  
mineral oil and finally brought  
to high lustre with rottenstone  
and mineral oil."

He flashed the violin around.  
Beautiful figuring on the back  
changed from silk to satin and  
back to silk in the light.

"Would you explain a Stradi-  
varius and a Guarnerius?"

"Gladly. The Guarnerius is for  
the powerful brilliant tone. It  
was built by Joseph Gesu Del  
Guarnieri. The Stradivarius was  
built by Antonio Stradivari. Both  
men were from Cremona, Italy.  
The Strad has a rich organ-like  
tone."

"How can you tell one from  
the other by looking at them?"

"In the dimensions—most easi-  
ly seen in the area of the bouts  
or the waist. See—one is longer  
than the other."

"How long does it take to build  
a violin?"

"About six weeks — perhaps  
less, but someday I will retire  
and really build a violin. Day-  
light is best for the work, best

for any exacting work.

"Yes, I have built 28 or 29  
violins and they sell, depending  
on the buyer, for two hundred  
and fifty dollars down to one  
hundred."

"What does violin making do  
for you, Mr. Lamkin?"

"It keeps you busy and it's a  
fine and satisfying hobby. They  
look so pretty and sound so beau-  
tiful when finished. It's good for  
a man inside, to build violins.

"What does my wife think  
about it?" He nodded his head  
in pride. "She says keep it up,  
Glenn. And so, I keep it up."

Outside, a Northrop LAX test  
airplane roared, punctuating the  
end of the interview.

Officer Lamkin put his violins  
—his Strads, and the Guarneri-  
us, made of spruce and Oregon  
myrtle, carefully away in their  
cases.

His big hands were infinite in  
their tenderness and patience.

**Max Stanley  
Honored by  
Test Pilots**

Special honor came to Max  
Stanley, director, Northrop  
Flight Department. He was  
among several who were desig-  
nated honorary fellows by the  
Society of Experimental Test  
Pilots.

Others who received similar  
honors were such aviation pion-  
eers as Jimmy Doolittle, Howard  
Hughes, Air Force General Al-  
bert M. Boyd, and retired Navy  
Admiral F. M. Trapnell. Awards  
were bestowed at the Society's  
first annual banquet October 4  
at the Beverly Hilton. R. E. Hor-  
ner, assistant secretary of the AF  
for research and development  
was principal speaker.

The Society was started in Sep-  
tember 1955 with Ray Tenhoff,  
Northrop experimental flight test  
pilot, as first president. New pres-  
ident is George R. Jansen, chief  
pilot of Douglas-Edwards.

Some of the objectives of the  
Society are to promote air safety,  
exchange information for im-  
proving testing techniques, and  
exchange ideas, experiences and  
information concerning escape  
from high speed aircraft.



"THIS IS the dead pan type of thing . . ."



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

PLYMOUTH, 1953 Cranbrook club coupe, \$500. FR 5-2315. A

ENCYCLOPEDIAS, Collier's, 20 vol., year book, dictionary, 7 science and medical books, \$150. Box 210. A

MISCELLANEOUS, G.E. intake-exhaust fans, twin 12", thermo control; lawn sprinkler system, Irri-Kit, above ground, 6 Rainbird sprinkler heads; electric shaver, Sunbeam. DA 4-3912. A

CHEVROLET, 1950 Fleetline Deluxe 4-door sedan, \$350. HE 2-2036. A

HOUSE, GI resale, Rolling Hills, 3-bedroom, family room, 2 baths, carpeted, drapes, patios, fenced, 1 year old, \$27,500. FR 5-7920. A

CANOE, 16' sailing Hawaiian outrigger, trailer, custom fitted to boat, \$525. OR 4-4206. A

IRONER, Ironrite Deluxe model, \$175. GI 4-2781. A

BABY FURNITURE, baby crib, mattress, large play-pen, baby butler, car seat, swing and stand, \$100. AN 1-5301. A

BABY BUGGY, Welsh collapsible, lifts off frame, \$5. DA 6-1471. A

FORD, 1939, \$40. FR 5-9946. A

CHAISE LOUNGE, redwood, pad, \$6; gas HEATER, Dearborn \$10; bathroom HEATER, hose, \$3; electric HEATER, \$2; child's white desk, \$5. DA 4-6748. A

LINCOLN, 1933 KA sedan, original condition. FR 2-6913. A

TV, 27" 1955 blonde console, U.H.F., \$200. FA 8-3320. A

SPANISH GUITAR, Monterey console, \$35. OS 5-9489. A

TRAILER, 2-wheel, 4'x8', canvas cover, \$75. PL 6-8633. A

BUICK, 1948 convertible, new motor block, generator, battery, Dynaflo, overhauled recently, \$175. PL 2-3696. A

ELECTRICAL MATERIAL, various. OS 6-1842. A

HOLIDAY CANDLES, frosted, any color, \$1.75 & \$2.75. LU 5-6960. A

CAMERA, Argus C-4, B-C flash, case, \$45. OS 5-6041. A

DRAFTSMAN'S CHAIR, newly recovered, \$27.50; modern CLUB CHAIR and OTTOMAN, red naugahyde, \$35; TEETERBARE, with guards, \$5. FR 2-3827. A

FORD, 1947 club coupe, lowered, \$125. OR 2-2093. A

FURNITURE, 2-piece Kroehler sectional, 3 matched blonde tables, blonde dinette set, 2-tier corner table, chest type GE freezer. DA 9-2731. A

TRAILER, Higgins, sleeps 4, \$135; PIANO ACCORDION, Fontanella, 120 bass, 2-switch on keys & bass, case, \$135. PL 6-9775. A

HOME STUDY COURSE, radio, TV, electronics, National Schools, various equipment & booklets, \$50. FR 2-8019. A

VOLKSWAGEN, 1955 sunroof, new paint, \$1500. NE 5-7439. A

POWER MOWER, electric, \$20. DA 3-4580. A

CAMP TRAILER, teardrop, sleeps 2, butane stove, \$150. OS 6-9756. A

CAMERA, 2 1/4 x 3 1/4 Speed Graphic, f.4, 5 optar lens, case, extras, \$135. OS 6-8860. A

COUCH, Simmons, studio, \$16; SLIP COVER, \$7. OR 1-3552. A

TRUMPET, Conn, case, mute, lie, \$100. NE 2-3597. A

PONTIAC, 1956 Starchief convertible, Hydramatic, new tires, safety tubes, power pack, \$1875. PR 4-0215. A

BOAT, 14' plywood, 25 hp, 1957 Sea-King motor, trailer, \$675. Box 209. A

JAGUAR, 1952, XK-120, hardtop, new convertible top, tonneau cockpit cover, \$1695. FR 9-3128. A

FORD, 1954 V-8 custom line 4-door, new tires, DI 8-2162. A

HOUSE, 1-bedroom, furnished, Hawthorne, \$6500, submit down payment. OS 6-8331. A

FORD, 1954 1/2 ton truck, Ford-O-Matic, sportsman top, walk-in, sleeps 3, stove, ice box, \$1500 complete or \$550 for top. FR 4-6884. A

HOUSE, 2-bedroom, garage, carpet, 2 yrs. old, near plant, landscaped, dead-end street, \$700 equity & take over payments. TE 5-5060. A

BABY TENDER, \$15. DA 9-5646. A

BOAT, 19' cabin cruiser, 30 hp outboard, trailer. \$1595. low down. DA 3-5546. A

HOUSE, 3-bedroom, Culver Crest, fenced, patio, carpet, drapes, \$22,900. VE 9-0105. A

MOTORCYCLE, 1940 Harley-Davidson, 1947 engine, \$125. FR 2-4558. A

FORD, 1947 2-door sedan, \$125. TO 9-6888. A

LETTERING SET, Leroy, 3 mos. old, 7 templates, extras, \$45. ME 0-6618. A

SPEAKER ENCLOSURE, 15" Stromberg-Carlson, blonde finish, never used. PL 6-7566. A

## FOR SALE

DOG, toy Boston Bull PUPPIES, pure bred, no papers, \$25. PR 4-8550. A

POWER MOWER, 2 hp Briggs & Stratton engine, recently sharpened, adjusted, \$50. LA 2-5889. A

GAS RANGE, Gaffers & Sattler, chrome top, auto. timer & clock, \$125. HE 4-8209. A

JEEP ENGINE, 4 cyl., L head. FR 5-2744. A

WASHER & DRYER, 1954 Whirlpool, \$200. OR 4-3295. A

RADIO-PHONO, 3-speed Packard Bell, blonde, modern, table model, w/table, \$50. DA 6-3235. A

GAS RANGE, O'Keefe & Merritt, glass door oven, grillavator, clock, timer, chrome top, \$150. PR 4-3503. A

THUNDERBIRD, 1955, full power, hardtop, Ford-O-Matic, \$2500. GA 7-6575. A

CHEVROLET, 1950 2-door, 6 passenger club coupe, \$200. FR 5-5525. A

ICE SKATES, woman's white figure, size 9, \$6. DA 4-7855. A

SOFA-BED, with slip cover, modern, \$15. PL 6-0116. A

TRIPLEX, near beach, N. Hermosa, partially furnished, owner leaving, substantial down. FR 9-9235. A

HOUSE, 3-bedroom, 1 1/4 bath, fireplace, carpet, patio, not tract house, Anaheim. DU 2-3443. A

SUNBEAM ALPINE, 1954, tools & shop manual, \$1400; Victory class SAILBOAT, orlon sails, 1 yr. old, trailer, \$750. FR 5-6773. A

LUGGAGE, 2 pieces, not matched, \$2 each; electric GUITAR, amp., \$85. DA 3-5449. A

STROLLER, for twins, \$15. FR 2-9013. A

DEEP FREEZE, Coronado, chest-type, cap. 400 lbs, \$125. PL 5-9022. A

STUDEBAKER, 1950 Starlite Commander coupe, \$250. OR 7-8825. A

DINETTE SET, mahogany; 2 TV's, 16" & 24"; BABY ITEMS; coffee TABLE. DA 6-4327. A

GAS RANGE, O'Keefe & Merritt, 4 burner, 36" oven, broiler, \$68. FR 7-2906. A

CHEVROLET, 1949 2-door sedan, new paint, \$295. GR 3-5824. A

CAR RADIO, 6 volt, push-button, never used, antenna, fits any car, \$35; 6 volt car heater, \$7. OR 1-1325. A

WATER SOFTENER, Lindsey automatic, 1 year old, 15 lbs. salt, \$200. Box 203. A

FURNITURE, blonde, davenport, chair, tables, record stand, bar, \$250. Box 202. A

FURNITURE, overstuffed set, needs reupholstering, braided rug, curtains, planter lamps. OS 6-0914. A

HOUSE, 3-bedroom, 2 baths, 3 yrs old, 2-car garage, block wall, patio, rumpus room, owner will carry 2nd, payable in 5 yrs., \$16,500, \$2000 down; DINING ROOM SET, 8-piece, \$100. DA 9-5788. A

FORD, 1954 Victoria V-8, Ford-O-Matic, \$1100. PL 6-8429. A

BREAKFAST SET, grey chrome, 4 chairs, \$30. FR 9-8303. A

TV, 21" Raytheon, mahogany cabinet, \$50. OR 4-6161. A

BOAT, 16' Birchcraft cabin cruiser, 25 hp Buccanier outboard, extra prop, bait tank, extras, trailer with winch, \$1250. FR 9-4020. A

NASH, 1957 Rambler Cross Country station wagon, auto. transmission, \$168 down, take over payments. PL 5-7231. A

FORD, 1953 Tudor sedan, overdrive, \$595. GA 3-1363. A

HIGH CHAIR, \$8. OS 5-2058. A

GAS RANGE, Gaffers & Sattler, \$50. DA 9-5806. A

AUSTIN-HEALEY, 1954. EA 2-2930. A

GUN, Winchester 94, 30 cal., checked stock, sling, case, ammo, shell holder, \$65. FR 6-9567. A

TIRES, 4 670-15 for trailer; BOX, for trailer. Box 216. A

TONNEAU COVER, fits 1955-1956 Ford convertible, GR 7-1937. A

SHOTGUN, 12 ga. Ithaca, double 28" barrels, open & impr., single triaquer, RIFLE, 25/20 Savage, 4x scope. FR 5-6702. A

DOOR PANEL, sliding overhead, 12'x10', tracks, hardware, \$30. OS 6-4378. A

RADIO, Magnavox, dual speaker, AM-FM table model, blonde, 1 1/2 yrs. old, \$60. Box 212. A

MISCELLANEOUS, gas engine, 1.7 h.p., Westbend aircooled, \$20; 8' pole-boat hook, \$5; 2-meter 522 transceiver, \$25; Desco divina mask, bag, belt, hand pump, \$40. EX 8-5201. A

WILLIS, 1952 Aero 2-door, overdrive, take over payments, \$25.68. Box 214. A

SECTIONAL, 2-pc, modern, recently upholstered, \$85. FR 8-2810. A

GAS RANGE, Universal, oversize oven, thermo control, \$65. PL 8-0415. A

## FOR SALE

CHEVROLET, 1948 club coupe, \$150. DA 4-3296. A

CAMERA, Perflex "55," 35mm, f/2.8, to 1/1250 sec., range finder, rewind, no dup, advance, flash attach., case, \$25. TH 8-5416. A

DOUBLE BED, head & foot board, box springs, mattress; blue RUG, 9'x12', \$30. HO 5-1380. A

STUDEBAKER, 1949 4-door Commander, overdrive, \$100. PL 5-0863. A

MOTORCYCLE, 1955 Triumph cub, 200 c.c.; TWIN BEDS, foam rubber mattresses & box springs, head board. OR 2-1104. A

FURNITURE, Riviera hideabed, stove, refrigerator, dinette, auto washer, T.V. PL 4-2726. A

REVOLVER, highway patrolman 357 magnum, holster, belt, 50 rounds ammo, \$75. Box 218. A

CHEVROLET, 1952 convertible, new top, \$500. Box 217. A

WASHER, Kenmore automatic, deluxe model, \$75. DA 9-6622. A

PLYMOUTH, 1951 2-door sedan, new paint, seat covers, \$395. FR 9-9616. A

WASHER, Kenmore automatic, 3 yrs. old, \$50. DA 3-6185. A

DINING ROOM SET, walnut, 6 chairs, china closet, modern, \$125. DA 4-1593. A

DINING TABLE, modern blonde oak, 4 chairs; blonde swivel top TV TABLE. OR 2-6360. A

CHINA CLOSET, Saqinaw mahogany, breakfront, \$100. LU 5-1488. A

TIRE, white wall 7.10x15 Goodyear retread, tube. \$8.50. OX 9-6181. A

BOWLING BALL, 16 lb. short arip, \$10; G.E. exposure METER, never used, \$10. FA 8-5269. A

HOUSE, new, Palos Verdes, 3-bedroom, family rm., 2 ba., double fireplace, intercom, carpet, built-in electric kitchen, \$31,500; Hotpoint electric RANGE, auto. oven, clock, deep well. PL 2-0677. A

WIRE RECORDER, Webster - Chicago, spoils, \$35. OR 1-9620. A

DODGE, 1948 club coupe, new engine, new paint, \$375; dual speaker tape RECORDER, \$70; 8mm MOVIE CAMERA, \$20; Matchless 500 c.c. MOTORCYCLE, \$400. OS 6-8651. A

DRESS, hand knit, all wool, size 12-14, OR 4-1665. A

HEATERS, gas, \$2.50, \$7, \$9; gas REFRIGERATOR, \$20; bleached walnut BEDROOM SET, \$45. PL 5-6301. A

FORD, 1957 Fairlane 500 hardtop, power steering, T-Bird engine, \$2100. Box 215. A

MISCELLANEOUS, 1951 Studebaker Commander, auto transmission, \$300; 1949 Plymouth, \$125; 16" TV, \$60; 12 1/2" table TV, \$45; dining set, opens to 90", \$60. FR 9-8108. A

PIANO, Wurlitzer electric, portable, \$175; Oriental RUG, pad, 10'9"x15" not including fringe, \$100; oversized foam rubber BREAKFAST SET, yellow, \$100; carved walnut DINING ROOM SET, 66" buffet, 6 upholstered chairs, leaves, \$125. PL 9-8257. A

TABLES, coffee & 2 end tables, Provincial, \$25. OS 6-6604. A

MGA, 1956, wire wheels, tonneau cover, \$2150. AX 4-7838. A

RIFLE, 30/06 Winchester, Weaver K4 scope, case, \$115. PL 4-7861. A

MERCURY, 1950 coupe, overdrive, new engine, brakes, \$395. PL 7-1605. A

MISCELLANEOUS, 1954 Ford 6 Ranch Wagon, overdrive, take over payments, \$45 month, 22 months; Gonset Tri-Band converter, 80, 20, 10 meters, \$20; Super-6 converter, \$40; stainless steel mobile 10 meter whip aerial, \$8; Webster Holiday portable phonograph, 4-speed, diamond needle, \$40. FR 9-4081. A

CHEVROLET, 1949 deluxe tudor, metal work completed, primed, ready for painting, \$375. \$100 down, minimum of \$20 per mo. at 4% on balance. PL 5-9075. A

JUKE BOX, Wurlitzer, 150 records, \$50; Jackson signal GENERATOR, model 106, \$30; CD capacitance ANALYZER, model BN, \$10. FR 5-8263. A

MISCELLANEOUS, 24 pc. Early American Fostellera punch bowl set, \$27.50; 4 place setting Castleton china; Arvin electric heater, \$4.75. OR 2-9497 after 10 a.m. A

PHOTO EQUIPMENT, Kodak printing & developing set, never used, Popular Photography issues to buyer. DA 9-5364. A

HOUSE, 1 1/2 years old, 3-bedroom, carpet, double garage, basement, near schools, So. Bay shopping, Redondo, \$14,500. FR 9-4549. A

HEARING AIDS, 2, Zenith. Box 201. A

FORD, 1952 Crestline hardtop convertible, Ford-O-Matic, \$695. FR 4-1172. A

COUCH, platform ROCKER, \$15 each. OS 5-0548. A

HOUSE, 2-bedroom stucco, double garage, patio, 8 yrs. old, R-2 lot, Hawthorne, \$12,500 approx. \$2000 down; marble COFFEE TABLE, iron legs, \$10; 5 pc. DINETTE, \$45. Box 204. A

MOTORCYCLE, 1948 Harley-Davidson, \$180; Remington auto .22 RIFLE, Weaver B4 scope, case, cleaning kit, \$40; AQUA-LUNG, 2 stage regulator, hoses, mouthpiece, \$50. FR 4-7907. A

STOVE, electric, deep well, \$10. FR 4-1152. A

FORD, 1950 1/2 ton pickup, \$425. TE 3-4851. A

FORD, 1939 coupe, 1946 Merc. V-8 engine, new brakes, carb., fuel pump, \$125. NO 2-5388. A

MOVIE CAMERA, Keystone 8mm, mag. load, Bel Air, 2.5 lens, \$40. OS 6-3633. A

REFRIGERATOR, Philco 8 cu. ft., 9 yrs. old, \$40. DA 6-7726. A

## FOR SALE

BABY CRIB, mattress, \$10. FR 9-1397. A

FORD, 1940 2-door sedan, \$100. OR 4-9891. A

FORD, 1956 V-8, 1/2 ton, Ford-O-Matic, custom cab; truck BUMPER, mirror, twin mufflers, chrome stacks, tubeless tires. OR 7-3922. A

DINING ROOM SET, custom solid walnut Duncan Fyfe drop leaf, extra leaves, brocade upholstered chairs, buffet. OR 4-9321. A

CADILLAC, 1954 62 4-door, power brakes, steering, windows, seats, terms. OS 5-4096. A

VOLKSWAGEN, 1953 sunroof, \$995; 1953 FORD Mainline tudor, overdrive, \$595. GA 3-1363. A

HUNTING BOOTS, Redwing size 6D, \$10. FA 8-5365. A

DRESS, black cotton asymmetrically draped sheath, size 5, never worn. PL 6-7566. A

CAMERA, 35mm Edixa II, f2.8 Schneider lens, range finder, case, \$48. CR 6-6672. A

DRAFTING MACHINE, Bruning, 2 scales, 12" & 18", 4 yrs. old, \$70. WE 1-8478. A

RUG, 9'x12' hooked, pad, \$30; gas RANGE, \$30. OS 5-9278. A

DUAL MANIFOLD, Weiland, Rochester carb., air cleaners, linkage, 1937-1955 Chev. 6, \$40; Edmunds custom dual MANIFOLD, 1937-1955 Chev. 6, air cleaners, linkage, 97 Stromberg carb., \$35; AQUARIUM, attachments, fish. OR 2-3082. A

BUNK BED, built-in, foam rubber mattress, \$20; Kroehler SOFA, beige cover, \$10. OR 2-7679. A

STOVE, Wedgewood deluxe, chrome top, ariddle, broiler, timer, \$175; TRICYCLE; TOIDY SET, 3-piece. FR 4-5935. A

BOAT, 14'6" runabout, 40 h.p. outboard motor, trailer, skis, preservers, motor oil. OS 6-1724. A

DODGE, 1948 2-door sedan, \$75. OR 2-6447. A

FORD, 1957 convertible, Ford-O-Matic, T-Bird engine, power windows. EX 7-0560. A

TOY POODLE, female, registered AKC. TE 5-5759. A

HOUSE, contemporary 3-bedroom & family room, circular floor plan, all electric kitchen, f.a. heat, 1 1/2 baths, fireplace, patio, landscaped, near Radioplane, \$21,500, \$3500 down. DI 8-1611. A

TV, 21" mahogany console. PL 5-3407. A

DIVING EQUIPMENT, U.S. Diver, 72 cu. ft. tank, harness, aqua luna, single stage reg., depth gauge & compass, fins, masks, snorkel, stand, single band arbellett, all or part. Box 213. A

CORVETTE, 1957, 270 h.p., 2 tops, extras, \$3150. FA 8-2360. A

TABLE, corner, mahogany, \$15; 2-pc. SECTIONAL, \$30; 2 gas HEATERS, \$1.50, \$2.50; cement WHEEL BARROW, \$5; mahogany dining TABLE, chairs, \$10. DA 4-4750. A

TRAIN, H.O., tracks, trans., table, tunnels, extras, \$30. EX 4-



# Coast Guard Selects NRC Skippers

## AUXILIARY FLOTILLA TO BE ACTIVATED

The U.S. Coast Guard has announced the selection of twenty-one skippers of the NRC Boat Club to form USCG Auxiliary Flotilla 65. It will be the first such unit to be activated in the 11th Coast Guard District in ten years and will be based at King Harbor, Redondo Beach.

Colorful activation ceremonies will be held at the NRC Clubhouse October 23, 8 p.m., with the presentation of the USCG Auxiliary charter and flag. Installation of officers will also take place with Norcrafter Jack Shannon, commander; John Slack, vice commander; and Fred

Wheeler, training officer.

U.S. Coast Guard officials attending the ceremonies will be Captain Stanley Lindholm, chief of staff, 11th District; Commodore Win Unger, 11th District; Lieutenant R. J. Dahlby, director of Auxiliary; and Captain Jack Glass, Division Six, Vice Captain Ray Hampton will be in charge of the Coast Guard program.

Representatives of Northrop management including George Gore, corporate secretary and Northrop Division general counsel, and John B. Clark, director, Industrial Relations, will also be in attendance.

Participating in the ceremonies will be NRC sponsored Sea Scout units, the Mixed Chorus and members of the Boat Club. Members of other flotillas in Division Six have been extended invitations and all Norcrafters are cordially invited to witness the ceremonies.

Activation of the unit marks the first time that a flotilla has been made up of members of an existing group, the Coast Guard said. It pointed out that selection results from the NRC Boat Club's successful participation in the USCG Auxiliary safety program.

# Rare Amethyst Crystal Shown to Gem Hobbyists

A rare type of mushroom amethyst, believed to be the only one of its size in the world, was exhibited to Norcrafter Gem and Mineral Club hobbyists. Ray Cole, commissioner, said the gem was displayed with a group of quartz crystals during the Club's first class on mineralogy and basic geology.

Class instructor and noted mineralogist Paul Patchick obtained the huge gem while on assignment in Korea for the United Nations Korean Reconstruction Agency, Division of Mining.

Sixty-six members of the NRC Gem and Mineral Club participated in the first session of the 15-week seminar course. The

group meets for instruction each Thursday evening from 7 to 9 p.m. at the NRC clubhouse. Cole states that there is still an opportunity for those who wish to participate. A nominal fee of \$5 is charged to cover cost.

## BEST COSTUME, DOOR PRIZES AT BOAT CLUB LUAU

The color of Hawaii and music of the isles will be the setting for members and guests attending the Boat Club luau October 26. This is the date set for the annual Beachcombers Ball at the NRC Clubhouse.

Those turning out for the affair are planning to dress in costumes appropriate to the Hawaiian theme. The luau committee states that door prizes and awards for the best costume will be made. On the committee are Forry Ayrest, Mike Bals, Helen Swift, Helen Whitmore, and Milton Kibbey.

Following dinner at 7:30 p.m. there will be entertainment and dancing. Reservations are now on sale at \$2.75 per person. Contact any NRC Boat Club member or Personnel Activities office for tickets.

## Night Shift Bowlers Form Scratch League

Night shift bowlers interested in the Scratch League for men and women met yesterday morning at Roselanes. They set plans to start rolling next Tuesday, October 15, reports Mary Minnaugh, night bowling commissioner.

Bowlers planning the Handicap League will meet tomorrow morning, Thursday, October 10, at 11 a.m. at Roselanes.

Day shift bowlers who were scheduled to launch the leagues at Roselanes this week will have to wait until next week, according to Lloyd Forstrom, commissioner. He explains that the leagues will start October 14, 15 and 18.



**HUSBAND AND WIFE** teams bowl first place in night shift Ball and Chain league. From left, Keith and Dorriene Decker, Goldie and Lee McGrew. New league is underway.



**GETTING IT FROM BOTH** sides, including what seems to be a bite on his thumb from Hank Musselman, is umpire Mac McLarney. Royce Lee, Jim Piechoki and Walt Graves, right, are the manhandlers; Chuck Heile, below, nudges in. Ruckus occurred during comical Black Bat tourney.

# They've Put Away All Bats Except One With The Hole

Hail the champs! Department 5437's second shift softball team won the all-plant championship for the 1957 season.

A closely contested 9 to 8 win over Department 5962 decided the series. Highlights of the final

game were homers by Jack White and Perry Cannon for the winners and a two-base hit by Chuck Hiller which drove in three runs for the losers.

Jack White was on the mound for 5437 and Bob Holman did the hurling for 5962.

After winning the plant championship, 5437 went on to capture the Black Bat League trophy by defeating Mariposa 7 to 0. Losers in the tourney, Department 5980, possess the giant black bat with the hole in it. They were defeated 12 to 7 by the 89ers.



**NORTHROP'S** Lillian Kemble, right, and top awards she won with Ellen Rogers in Womens Pacific Coast Skin Diving Contest at Laguna.

## SKREET SHOOTERS SHARPEN UP AIM FOR TROPHY MEET

Northrop skeet shooters will be sharpening their aim during the next few weeks. Reason is the coming trophy shoot to be held in the latter part of November. Exact date will be announced.

H. D. Bowers, Skeet Club commissioner, said that a handicap will be established to give the novice and the expert an equal chance at the attractive trophy. To determine the handicap, entrants will have to fire 100 rounds at the Club's regularly scheduled Saturday meets.

Scene is the North Long Beach Dominguez Skeet Range on Artesia (174th) just east of Avalon. Time is 10:30 a.m. October 19, November 2 and 16.

# 52 Miles per Gallon Wins In Sports Car Economy Run

Auto owners, look here. Results of the NRC Sports Car Club Economy Run are in. Jim Minter, rally master, reports the following first place winners in each class.

Class A—Hal Hunsberger, in his Renault, 51.36 miles per gallon.

Class B—R. F. Reynolds, in a Volkswagen, 45.9 miles per gallon.

Class C—William Brandes, in a Mercedes 190 SL, 52.75. This was best overall mileage for the run and merited the Mobilgas sweepstakes trophy.

Class D—Ward Brannon, with an Austin Healey, 31 miles per gallon.

Class E—Bertram Shaw, in a Jaguar XK 140, 30.42 miles per gallon.

Poker hand winner was Patricia Venable who navigated for her husband Pierce in a Nash Healey. She held a queen, three jacks and a three spot.

Sportsmanship trophy goes to Norcrafter Don Pepper who

stopped his Volkswagen during the run to assist another driver. His mileage was so close to the car which beat his, officials say the stop may have cost him the first place trophy.

Awards for the first place winners will be presented at tomorrow night's regular meeting of the Sports Car Club, Minter reports. Assisting him during the economy run were Jim's wife June, Bob and Beverly Zepeda, Ray Coburn, Hal Guest, Bill Hanna and Bob Nichols.

## CHANCE MEETING STARTS AMATEUR RADIO NETWORK

It all started with a chance meeting on the same radio wave length one Sunday morning recently. Four Norcrafter amateur station operators met without seeing one another and launched into friendly conversation. The topics of discussion were as varied as the individuals.

Now the meeting is repeated regularly. Each Sunday at 9 a.m. the operators tune their equipment to 29.00 megacycles. Their interest in short wave two-way radio communication prompted them to informally organize a radio network.

Plans are underway to tie this network into similar operations of Norcrafters at the Company's Florida facility. This will make possible the transmission of personal messages and telephone conversations with fellow employees. The network will also serve as one of the outlets of the NRC Radio Club.

Other Norcrafter station operators are invited to join the Sunday morning meetings on 29.00 m.c. Just ask for Bob Hayos, Paul Serafin, Joe Nelson or Hector Garcia.



**BUSSING** for Ruth Dearmon, San Pedro "USO Girl of the Year". A Public Relations Norcrafter, Ruth has been in USO for three years.

# Holidayland Finance Picnic

Finance personnel will have Indians on the warpath October 20 and will eye-witness one of the West's most vicious gun fights.

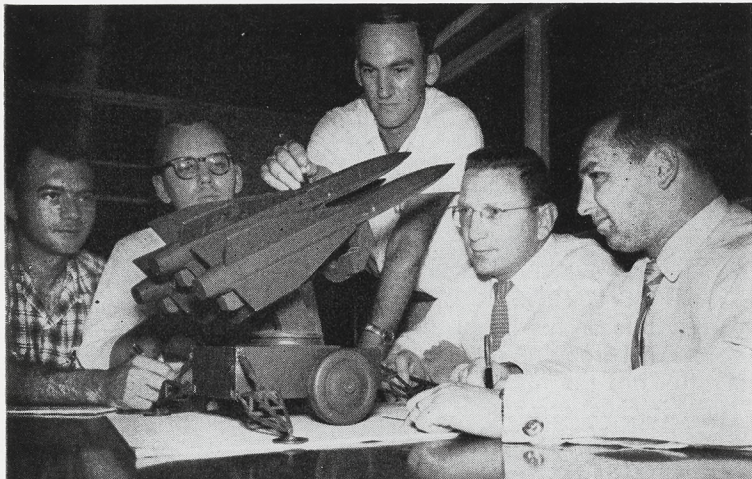
This is the latest report from Paul Baker, general chairman of the planning committee for the Finance division's sixth annual picnic. It will be held at sprawling Holidayland, adjacent to Disneyland in Anaheim. Radioplane and Anaheim Norcrafters will join the thousand-strong group planning to attend.

Program of the day will start to the sound of gun shots as "Black Bart and Lucky" battle it out. Following morning games and door prizes the group will lunch. Then the Indians take over to present an authentic war dance. More door prizes and games end the program and discount tickets to Disneyland go on sale.

Picnic planning committee, headed by Baker, includes Marie McCabe, Ernie Boren, Jack Conroy, Art Johnson, Al Nichols, John Vilha, Ed Conway, Joe Woodward, Dorothy Schmidt, Don Grothe, Jack Cross and Jenne Peck.

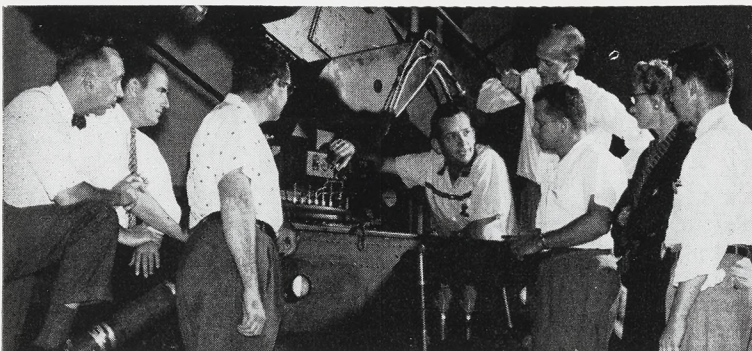


# Northrop News Pictorial

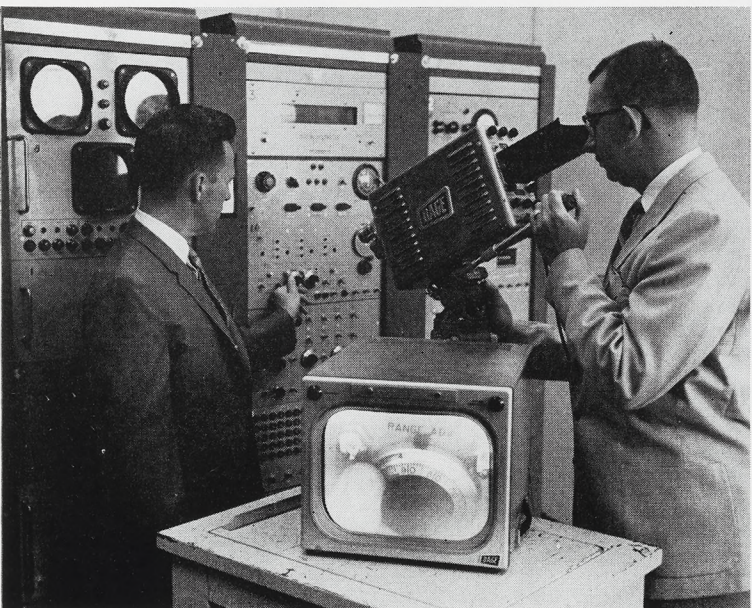


**HAWK MISSILE PROJECT KEY MEN**—These photos above and below show key Northrop men on Raytheon Hawk programs (see story, page 1). Around table model of weapon in Northrop's Hawk weapon system office at Hawthorne are: Bob Shaftel, project engineer, second from right; Paul Brunner, assistant project engineer, right; then from left, Bob Nicholson, aerodynamics lead engineer; Ken Rosenberg, structural designer; and Jack Wells, airframe lead engineer, all of airframe design team.

## The Northrop Team on Hawk



**OTHERS AT HAWTHORNE**, where Northrop's top responsibility over Hawk work is officed, left to right—Walt Crowder, electrical lead engineer; Lee Keene, servo-mechanisms; John Pigford, controls lead engineer; Ted Pratt, hydraulics lead engineer; Dave Sieck, structures lead engineer; Carroll Phillips, launching and landing gear lead engineer; Martha Nicoll, heat and vent lead engineer; and Dick King, servo-mechanisms lead engineer. Group designed launcher and loader components. **AT ANAHEIM**, where Northrop components for Raytheon Hawk are actually manufactured, that facility's nucleus of top talent on program, not shown, includes: Bob Philbrick, Hawk engineering administrator, John Watson, design engineer, and Bill Armstrong, project coordinator.



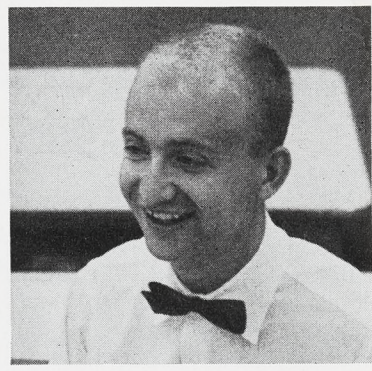
**MAGNIFICATION POWER** of television for training purposes is demonstrated by Bill Stetson, Northrop training specialist, left. Lloyd Matter, television consultant, aims camera at test equipment dial which is reproduced on TV monitor screen. For detail, see story, page 2.



**PIX HERE** and below sample that "new home" moving in feeling around Engineering these days. Here, Barbara Cook on the horn.

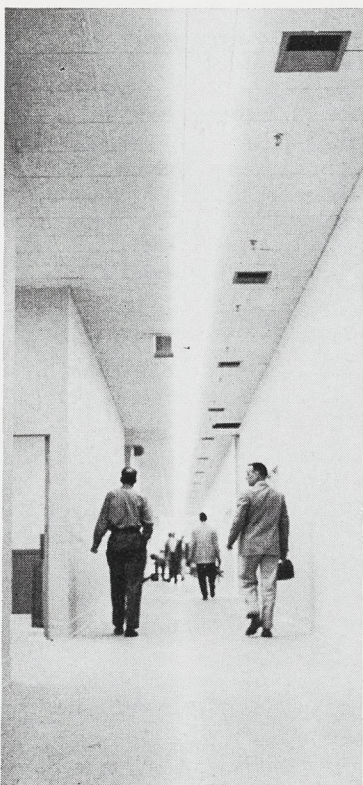


**UNPACKING** on a Monday, first day in—Leonard Williams, Fred Henry, Bob Fujioka, John Dennis, Al Lagerstrom and Lou Herman.



**HAPPY ENGINEER**, Howard Cottingham, Model Design, mirrors the reaction. Move went smooth, like walking from one room to next.

## Engineering Moves Into Its New Home



**BRIGHT**, long hallway handles the traffic with ease. The atmosphere—pleasant.



**SPACE**, cleanliness, were two factors appreciated by Buck Nichols, Sue Hyde, Margaret Holland and Ann Ryan of Data Requirements.

**MESSENGERS** Doris Olsen, Nancy Setzer deliver their mail on 'round-plant run via supermarket buggy.



**NOISE LEVEL** is very low, distractions almost nil in new Engineering set-up. "Efficiency will up," note Ralph Carlstrand, Larry LeVan, "because people can better focus on their jobs." George Douglas, Engineering vice president and general manager, agrees. See interview story, page 1.



**NORTHROP PHOTOG** Al Saiget catches Norcrafters in silhouette outside Northrop's new Engineering home.

## Norcrafter Helps Hand that Helped Him

*How can a man show that he loves this world.*

*Listen to the story about Norcrafter Hal Mailhot.*

*Hal was sick. He went to Daniel Freeman. He was there a week. How long is a week? It can be eternity. It can be an instant. To Hal, it was both an eternity and an instant.*

*The doctors, the nurses, and the good sisters at Daniel Freeman, in their great gentleness and knowledge made Hal well again. Being sick was Hal's eternity. Getting thankfully well was his instant.*

*Hal's humble answer to this manifestation was forthright and direct. He bought furnishings for a hospital room—an amount that he would have to work about 40 days for.*

*Many of us have felt this way—wanting to do something about a fine experience—wanting to show our gratitude and approval. We usually put it off. It is finally forgotten. But not Hal. He did it. The money it cost didn't make Hal poor. Quite the contrary. It made him as rich as any man can ever be.*



**HAL MAILHOT**, with Sister Jerome of D-F Hospital.



# Northrop Science Center Wins Architects' Award

Northrop's new engineering building and cafeteria complex was selected for one of five hon-

## Phil Brooks, Engineering, At Oak Ridge

A Northrop engineer is receiving instruction on the latest advances in atomic reactor technology at the Atomic Energy Commission's Oak Ridge National Laboratory in Tennessee. He is Phil Brooks, an eleven-year Northrop engineer and supervisor of structures research, Structures Department.

Phil was selected to attend the Oak Ridge School of Reactor Technology following nomination by Northrop. Selection was made by a committee of AEC, ORSORT and cooperating university representatives.

Participation in the ORSORT program will mean a valuable contribution to Northrop's fund of technical knowledge in the field of atomic energy, according to George Mangurian, chief, Analytical Engineering.

The year-long program of ORSORT includes a half year of study at a cooperating university and a half year at the Oak Ridge laboratory. He completed the university portion of the program at the University of California with high honors.

or awards from the Los Angeles Chapter of the American Institute of Architects. Selection was based on design excellence and execution.

Sharing the honor are Pereira and Luckman, architects; Vinell Company, Inc., contractors; and Northrop. Robert R. Miller, vice president and general manager, Northrop Division, accepted the award in behalf of the Company at a presentation dinner last week. President Whitley C. Collins, out of the city on a business trip, had also planned to attend.

More than 200 architects in Southern California submitted entries of buildings completed within the past four years. From this list, 40 were selected for merit awards including the Northrop buildings.

A jury of leading architects from across the nation and Charles Ducommun, Los Angeles Chamber of Commerce president, selected the top five. The five award buildings will also be entered in a national competition soon.

The jury of architects visited the Northrop facilities prior to the final selection. Some of the comments in choosing the Company engineering building and cafeteria for the award included, "... wonderful overall complex ... good example of owner's participation in planning and design ... great improvement to Hawthorne area ... equivalent to a landmark".

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, October 23, 1957

## Efficiency—Practical Way

GEORGE GORE OUTLINES SAVINGS SIGNS—  
EDUCATION, COMMUNICATION, PRACTICALITY

Northrop's intensive effort to increase operational efficiency continued last week. For another report from a member of top management on progress to date

## French High Honor to Northrop V-P

Geoffrey Parsons, jr., vice president for Europe of Northrop International, has been promoted to a commander of the French Legion of Honor, it was announced by Romain Gary, consul general for France.

Established by Napoleon The First, the French Legion of Honor is that country's highest military and civilian recognition of outstanding service in national and international affairs.

Recently elected a vice president of Northrop International, Mr. Parsons maintains residence in Paris, France. He is former director of information of North Atlantic Treaty Organization.

in the major campaign, Northrop News this issue went to George Gore in the office of the General Counsel—an office which directs a broad range of key functions.

Mr. Gore is secretary, Northrop Aircraft, Inc., and general counsel, Legal, for Northrop Division.

He is also administrative head for the Patent Office, Industrial Relations, and Security and Protection Services activities. Directors of these functions are respectively Colonel H. E. Metcalf, John B. Clark and Paul H. Crews.

"Basically, there are three main points in our approach," said Mr. Gore. "Self-analysis is the key. We are seeking to improve our efficiency in practical and immediate ways, and also through education and communications."

Applying techniques of Methods Engineering to improve utilization of facilities and skills has proven a prime source for getting practical and immediate results, according to the General Counsel. In this area—such specifics as a

complete changeover in the filing system and manner of handling the personnel security files within the Security and Protection Services department. Mr. Crews is directing this modernization and changeover. Better use of personnel, savings in floor space, make up the cost-reducing aspects of the move. Sharpening up of facilities appearance is an added by-product.

Specifically, the new filing system involves going from the conventional four-drawer filing case to the bookcase type. Under the new system, individual folders can be pulled from file as one would take a book from a shelf.

Mr. Gore emphasizes that the government is not relaxing its security requirements in any way. As a matter of fact, he says, these requirements are undergoing intensification. The new system offers improved control.

Similar results over a broader range of activities have been accomplished in Industrial Relations through the use of methods

(See EFFICIENCY, Page 2)

## MISSILE MEN SET FOR FIELD DUTY

A Snark proficiency training team has been assigned to an Air Force unit, it was announced by Lee Smith, director, Customer Service.

A group of twelve Northrop missile specialists from Customer Field Service will leave this month for duty with the 6555th Guided Missile Squadron at Patrick AFB, Florida.

Headed by Jim McFarlane and Scott Johnson, the group comprises a proficiency training team whose assignment will be to assist training of the Strategic Air Command in Snark operations.

In addition to the extensive background of practical experience, the men have undergone a rigorous Snark training program over the past months.

Here are brief thumbnail sketches of the men who will represent Northrop in the field—:

**Jim McFarlane**, technical team leader—. Seven-year Northrop engineer. Joined Company as electrical assembler after 22 years in the Navy. Retired in the rank of lieutenant. Was an engineering assistant on Snark guidance tests. Later worked as guidance test engineer during launches at Patrick. Married with two children.

Enjoys photography and swimming. A native Californian.

**M. Scott Johnson**, better known as Scotty—. He's granddad of all Northrop tech reps and is team's operational leader. Joined Company in 1942 as an inspector. Was second tech rep assigned on P-61 Black Widow, first on F-89. Last duty was F-89 command tech rep at NEAC headquarters in Newfoundland. First job as boy was aircraft mechanic's helper. Married. Interests include flying, astronomy, fishing. Home town: San Diego.

**Bob Kruse**, specialist on Snark guidance—. Joined Northrop in 1954 following USAF enlistment. First job with Company was electronic technician. Over three years experience on Snark, first on systems installation and test. Past year in technical advisory service, compiled and interpreted system data. Married. Favors all sports and photography. Hails from Long Beach.

**Joe Kaiser**, Snark guidance specialist—. Former Army Signal Corps technician. Started with a New York firm in electronics. Joined Northrop in 1954. Worked through technician, leadman.

(See MISSILE MEN, Page 3)

**SNARK PROFICIENCY** training team—From front to rear, Joe Kaiser, Terry White, Ed Sullivan, Bob Picer, Gene Agar, Jim McFarlane, Doug Marine, Scotty Johnson, Bob Kruse, Don Smith, John Cahill, and Oliver Thomas. McFarlane is team technical leader and Johnson is operational leader. Group leaves for AF duty this month at Patrick AFB, Florida, to assist training of SAC missile men.





## Cocoa SOS Brings Fast Action from Hawthorne

When the chips are down people come through.

It sometimes takes a set of unusual circumstances before this can be illustrated.

In Florida recently, a highway accident involving Norcrafters on their way to work, set the stage. Injuries were suffered by Mary Ellen Short of Data Reduction, Dorothy Williams of Guidance, and Eleanor Morgan of Instrumentation.

They were taken immediately to Wuesthoff Memorial Hospital in Cocoa. It was discovered that a Stryker Turning Frame, a vital piece of equipment needed to care for them properly, was not in the hospital. Fast telephone

calls found one in Tampa.

And now the problem was to buy one or rent one and fly it to Cocoa in time to do the girls some good. More telephone calls were made to Hawthorne Industrial Relations and Public Relations. The answer—the Company would pay all charges for the Stryker Turning Frame. Furthermore, after the girls recovered, Northrop would present this piece of equipment to the hospital in the name of the Company for use in any further injuries of this kind.

And now the happy ending to this story that started as a near tragedy. Mary Ellen, Dorothy, and Eleanor are on their way to recovery already.

## Northrop to Establish New Office at SAC Headquarters

Northrop will establish a liaison office at Omaha, Nebraska, to service Strategic Air Command headquarters there, it was announced by Whitley C. Collins, Northrop president.

Appointed to head the new office is Robert Lee Snider, retired U. S. Air Force colonel. He is a graduate of the U. S. Military Academy at West Point and retired from active service in February of this year.

During World War II he was stationed with the 8th Air Force in England and later was Assistant Director of Operations for Headquarters, U. S. Strategic Air Forces in Europe. In this assignment he aided in pioneer work in the use of war-weary B-17s as radio guided missiles. He was also the American representative to Britain on electronic counter measures for buzz bombs and V weapons.

Later he was a member of the War Department General Staff as chief of the Scientific Branch, Military Intelligence Service. In 1947 he assumed command of Davis AFB in the Aleutian Islands where famed Northrop



ROBERT LEE SNIDER

P-61 Black Widow night fighters were based.

Following a four year tour as faculty member at the Air War College, where he was in charge of the atomic weapons course, Colonel Snider was assigned Inspector General for SAC's Second Air Force at Barksdale, Louisiana. At the time of his retirement, he was commander of the 306th Bombardment Wing, a SAC B-47 unit at McDill AFB, Florida.

## Efficiency - - Through Practicality

(Continued from page 1)

engineering techniques, adds Mr. Gore.

Each department within Industrial Relations is undergoing detailed review for the purpose of

improving facilities and skills use wherever possible. Layout of the new Personnel office reflects the trend. "We have speeded up processing of personnel substantially as a result of the new Per-

sonnel office, while at the same time realizing savings," observes Mr. Gore.

"Industrial Training is another good example of what we are doing in this regard. The layout of Tom Darden's function has been completely redesigned to more effectively serve the Company's many-faceted program of sponsored personnel training at plants, in schools and through conferences. The new layout saves students' time as well as the Company's."

Hospital services is another of the many examples covered by the General Council. He reported that through improving the mobility of ambulance and nursing service to every part of the Hawthorne complex, it was possible to reduce the number of dispensaries by three.

Closer relations and cooperation with state and private agencies have been effected to insure that medical and unemployment claims are correct and submitted properly for accounting purposes.

A vigorous educational program is the second mainstay of efficiency improvement reported by Mr. Gore. Particular emphasis is being placed on budgets know-how. Staff meetings are being regularly held by the directors for their managers for the purpose of presenting concentrated briefings on the principles of good budgeting. As a practical matter, again, these discussions have revolved around the detailed budgets of the various departments.

New budget realization targets have been established for all major functions within Mr. Gore's responsibility, with November 4 the deadline for achievement by all departments. To insure sustained control of budgets throughout Industrial Relations, Director John Clark has set up a weekly audit. Under this program, each manager reports upon his cost goals for the period.

Other training devices instituted by Mr. Gore's organization include a monthly workshop for key people and a rotational job training program for selected personnel. In the workshop sessions comprehensive presentations covering various phases of the major work operations are offered by the particular experts in each case.

### RADIOPLANE M-C DIGEST HONORED

Radioplane's Management Club Digest, edited by Hal Slepian, was judged one of the top five award winners in the second annual National Management Association club publications contest.

Judging was based on the effectiveness of the publications' promotion of management objectives, principles and activities.

## New Northrop Fastener Aids Electronic Sub-assemblies

A new type of Northrop captive fastener, particularly adapted for use on electronic sub-assemblies, has been licensed for manufacture to the Moran Company, 115 Main Street, El Segundo, Calif., according to John E. Oliver, manager, Associated Products Department.

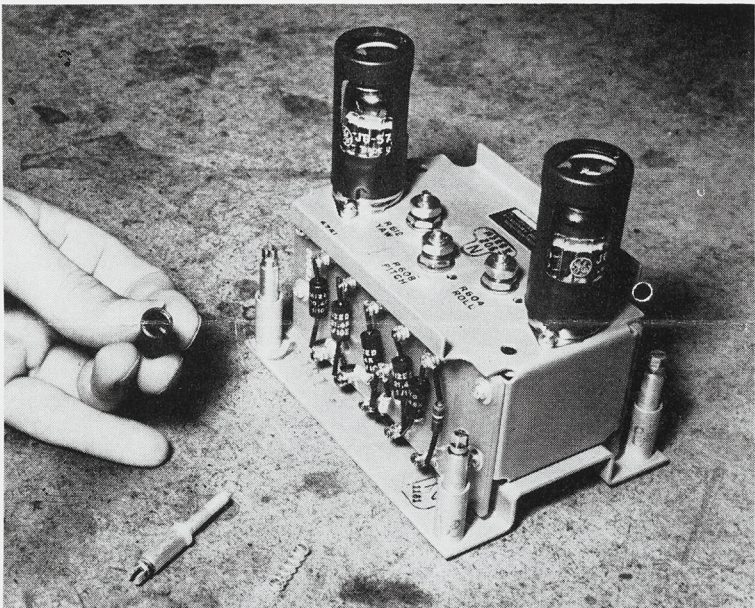
The fastener consists of a swaged-in-place sleeve, a bolt with both a threaded shoulder and shaft, and a small spring. Two threads at the top of the swaged-in-place sleeve accommodate the threaded shoulder of the bolt. Two turns of the bolt carry it through the threads to become "captive" within the sleeve, held in place by a small

tension spring.

The sub-assembly may be tightly fastened to a major assembly by turning the bolt into tapped holes or other mating fasteners until the bolt tightens on a shoulder in the lower part of the sleeve.

Advantages of the new device include elimination of loose fastener parts on the assembly or repair bench and its quick detach features. The bolt has a hexagonal, slotted head permitting use of either screw driver or wrench to attach or detach the sub-assembly.

The Moran Company will manufacture and market the fastener for industry-wide use.



**ELECTRONIC** assembly made easier—. New Northrop captive fastener eliminates loose fastener parts, provides quick detach. Screw driver or wrench may be used; for sale to industry by Moran Company in El Segundo.

## Tech-Rep Assignment to Africa



**NORTH AFRICAN ASSIGNMENT** — MB-1 tow reel and Norcrafters tech rep Ken Cunningham, second from right, among the palms at Wheelus Field, Tripoli, Libya. Ken is on hand with Bob Yapple, Martin B-57 tech rep, left, to advise Air Force men of the 7235th Squadron. Above, Staff Sergeant A. H. Murray, right, and Technical Sergeant E. T. Canales, second from left. Four MB-1 tow reels are carried by B-57. Wheelus is known as "Little Yuma of Europe". MB-1 is Northrop tow reel used to tow targets at high altitude—high speed aircraft rocketry training center.

### AIR ELECTRICAL SOCIETY WILL DISPLAY WARES

Newest aircraft electrical equipment will go on exhibition at the Aircraft Electrical Society's 14th annual display, October 24 and 25, at the Pan Pacific Auditorium. Norcrafters Lorne Bristol, a chairman of the Society, said that the display will feature new products contributing to ultimate scaling of the thermal barrier.

Largest of its type in the world, the display will also feature new equipment with a higher degree of shock, vibration and atomic radiation resistance than previously used products.

**Northrop News**

Vol. 16 Northrop Field, Hawthorne, Calif. No. 3

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PUBLIC RELATIONS, NORTHROP DIVISION  
CHARLES BARR, Manager

CHARLES BRADFORD, Editor

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### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 4)  
DOWNEY & IMPERIAL, Downey. (Car pool considered.) EDWIN W. DE BUHR (5993-53584, Ext. 2133). TO 1-8100.  
GARDENDALE & DOWNEY, Downey. (Car pool considered.) ROBERT C. GREENLEE (5993-53453, Ext. 2133).

(Zone 5)  
CARSON & ORANGE, Long Beach. G. J. GRUMMER (5161-14909, Ext. 2071). GA 7-4370. 2-5

(Zone 6)  
MOLINO & PACIFIC COAST HWY., Long Beach. LARRY PRUDHOMME (5337-54405, Ext. 1514). HE 8-1095. 2-6

(Zone 10)  
MANHATTAN BEACH BLVD. & SEPULVEDA, Manhattan Beach. DALE BRUMMETT (5568-54519, Ext. 575). 2-10  
GOULD LANE & SEPULVEDA, Hermosa Beach. ANN NOLLAN (5351-54432, Ext. 2582). FR 2-7910. 2-10

(Zone 14)  
WEST BLVD. & 64TH ST., Inglewood. C. M. WATSON (5232-35987, Ext. 2171). OR 8-2916. 2-14

7:30 a.m. — 4:15 p.m.

(Zone 2)  
NORMANDIE & 79TH ST., Los Angeles. ROWENA A. GORDON (9513-45211, Ext. 2264). 3-2

(Zone 3)  
NORMANDIE & 104TH ST., Los Angeles. HANNAH OMAN (5120-49661, Ext. 2371). PL 4-6818. 3-3

(Zone 4)  
IMPERIAL & NORMANDIE, Los Angeles. ESTHER FOSTER (9542-51266, Ext. 2228).

(Zone 5)  
KATELLA & GILBERT, Garden Grove. (Ride wanted starting Oct. 28.) H. F. GULLETT (5940-48384, Ext. 2661). NE 1-0677. 3-5

(Zone 6)  
ORANGE & 7TH ST., Long Beach. (Ride urgently needed.) BONNIE MEISSEN (5120-51123, Ext. 2304). 3-6  
OCEAN AVE. & 13th, Seal Beach. (Will meet at 7th, St. and 101 in Long Beach.) JIM BENSON (5141-50467, Ext. 1342). GE 1-1564. 3-6

(Zone 7)  
CARSON & VERMONT, Torrance. SALLY ROBERTS (9542-51226, Ext. 2228). FA 8-3825. 3-7

(Zone 8)  
PALOS VERDES DRIVE NORTH NEAR WESTERN, San Pedro. RUTH FERNANDEZ (5900-25002, Ext. 1321). TE 3-7766.  
PALOS VERDES DR. EAST & EASTFIELD, Rolling Hills. (Car pool considered.) JOHN G. McCUE (3410-31500, Ext. 556). FR 7-1184. 3-8  
CRENSHAW & 185TH ST., Torrance. (Ride urgently needed.) DIANE TRIMIEV (1421-53920, Ext. 691). DA 9-4831. 3-8  
CRENSHAW & 174TH ST., Torrance. SANDEE GAW (1440-52272, Ext. 2641). DA 4-8789. 3-8

(Zone 10)  
HERMOSA & 17TH ST., Hermosa Beach. (Ride urgently needed.) ROSEMARY PENNY (3120-48588, Ext. 2536). FR 2-0625. 3-10

(Zone 10)  
MANHATTAN BEACH & HIGHLAND AVE., Manhattan Beach. (Could possibly change hours to 7 a.m.-3:45 p.m. if ride is available.) MAUDE E. BISHO (5224-15382, Ext. 2484). FR 6-6002. 3-10

## PAM THOMPSON TOP OPPONENT IN BASKETBALL

"Outstanding Opponent" of the 1957 Women's Industrial Basketball League was Norcrafter Pam Thompson of the NEWS Office. Presentation of the only individual trophy in the league was made recently at a barbecue at Torrance Park.

Representing the Los Angeles County Department of Parks and Recreation, sponsor of the league, was Delores Thompson, no relation. Also on hand for the season's wind-up event were members of the four competing industrial teams — Douglas Aircraft, Torrance and El Segundo; North American Aviation, and Northrop Aircraft.

Selection of Pam Thompson for the signal honor as "Outstanding Opponent" was made by league officials and members of the winning team, Douglas-Torrance.

### RIDES WANTED

7:30 a.m. — 4:15 p.m.

(Zone 11)  
INGLEWOOD AVE. & 120TH ST., Hawthorne. JOANN YOST (3351-46360, Ext. 1415). 3-11  
SHELDON & GRAND, El Segundo. (Desire to form or join car pool.) BILL DUVAL (5910-45536, Ext. 2615). 3-11

(Zone 13)  
SEPULVEDA & CULVER BLVD., Culver City. SYLVIA HART (1310-41792, Ext. 1801). VE 9-0797. 3-13

(Zone 13)  
VENTURA BLVD. & TOPANGA CANYON, Canoga Park. (Car pool desired.) WILLIAM R. FAUGHT (8930-32246, Ext. 2717). DI 0-7216. 3-13

(Zone 14)  
BURBANK BLVD. & BUENA VISTA, Burbank. (Car pool desired.) W. W. RUNDLE (1210-29420, Ext. 487). TH 6-5589. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA & WESTERN, Los Angeles. H. GREER (3312-53657, Ext. 2775). HO 2-6068. 5-1  
CENTURY & CRENSHAW, Inglewood. MARVIN SILVER (3463-52619, Ext. 1638). OR 7-4206. 5-1

(Zone 2)  
WESTERN & CENTURY, Los Angeles. (Can drive alternate weeks.) W. A. SCHWARTZ (3423-30556, Ext. 1751). PL 4-9337. 5-2

(Zone 4)  
CENTURY & STATE ST., Lynwood. (Car pool considered.) ROBERTA J. ALTER (4510-40982, Ext. 2738). 5-4

(Zone 6)  
VERMONT & 169TH ST., Gardena. (Car pool considered.) THOMAS E. COLLINS (3360-51325, Ext. 1889). 5-6

(Zone 8)  
CRENSHAW & 182ND ST., Torrance. (Car pool considered.) LAWRENCE E. MARKS (3275-49542, Ext. 491). DA 3-4932. 5-8

(Zone 10)  
REDONDO BEACH & AVIATION, Manhattan Beach. (Need 1 or 2 more members for car pool.) JOE HANCOCK (3547-24483, Ext. 1872). FR 6-1656. 13-14

(Zone 13)  
VENTURA & SEPULVEDA, Reseda. (Car pool desired.) DICK EALY (3010-29667, Ext. 2311). DI 4-8849. 5-13

3:45 p.m. — 12:15 a.m.

(Zone 2)  
CENTRAL & 59TH PL., Los Angeles. FRANK SIGUIEROS (5568-54736, Ext. 2745). 6-2

(Zone 3)  
WASHINGTON & HAUSER BLVD., Los Angeles. ARIZ TORRES (5568-53491, Ext. 575). WE 9-8260. 6-3

(Zone 3)  
FLORENCE & HOOPER, Los Angeles. JOE L. COMBS (5562-53456, Ext. 575). LU 5-5450. 6-3

(Zone 4)  
CENTURY BLVD. & ALAMEDA, Lynwood. MINNIE MILLER (5160-48788, Ext. 663). NE 8-1432. 6-4

(Zone 5)  
SOUTH ST. OR CARSON & PIONEER, Artesia. (Car pool considered.) ROBERT A. ENGEL (5568-54990, Ext. 2745). 6-5

(Zone 8)  
REDONDO BEACH & 163RD ST., Lawndale. JOHN DAYTON (5501-54233, Ext. 2200). 6-8

4:45 p.m. — 1:15 a.m.

(Zone 4)  
U. S. HWY. 60 & SULLATINA, Ontario. (Car pool considered.) G. D. PERKINS (5568-54158, Ext. 2745). YU 6-9548. 8-4

(Zone 9)  
KORNBUM & CRENSHAW OR PRAIRIE, Hawthorne. LYNIE MARINKO (5160-40399, Ext. 663). OS 6-6108. 8-9

(Zone 10)  
EL SEGUNDO & INGLEWOOD, Hawthorne. C. A. MOON (5564-49911, Ext. 1251). OS 5-9356. 8-10

(Zone 10)  
ESPLANADA & PASEO DE LA PLAYA, Redondo Beach. S. J. DAVIS (5355-48556, Ext. 2083). FR 8-1505. 8-10

(Zone 13)  
VENICE & SEPULVEDA, Los Angeles. JIM BURDGE (6335-54448, Ext. 1679). 8-13

### Miscellaneous — Split Shift

(Zone 7)  
PACIFIC COAST HWY. & RAVENNA, Wilmington. (Hours: 4:15 p.m. - 12:15 a.m.) IRENE BURNS (5980-45468, Ext. 2600). 10-7

(Zone 10)  
PACIFIC COAST HWY. & REDONDO BEACH, Hermosa Beach. (Would accept ride home only. Hours: 4:15 p.m. - 12:45 a.m.) ELLEN HAYHURST (9542-54398, Ext. 1471). FR 9-5725. 10-10

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
VAN NESS & 58TH ST., Los Angeles. BETTY HUMMEL (5507-13797, Ext. 526). AX 5-1514. 12-1

(Zone 4)  
LA PALMA & MILLER RD., Buena Park. PAUL SCHAFFER (5231-53082, Ext. 1581). JA 7-83009. 12-4

DOWNEY & IMPERIAL, Downey. (Car pool considered.) EDWIN W. DE BUHR (5993-53584, Ext. 2133). TO 1-8100.  
GARDENDALE & DOWNEY, Downey. (Car pool considered.) ROBERT C. GREENLEE (5993-53453, Ext. 2133).

(Zone 5)  
MARKET & LONG BEACH BLVD., N. Long Beach. FRANKLIN S. CLINE (5517-22741, Ext. 527). GA 2-1040. 12-5

(Zone 6)  
MOLINO & PACIFIC COAST HWY., Long Beach. LARRY PRUDHOMME (5337-54405, Ext. 1514). HE 8-1095. 12-6

7:30 a.m. — 4:15 p.m.

(Zone 1)  
CRENSHAW & 74TH ST., Los Angeles. T. D. ODELL (3816-29965, Ext. 2777). PL 2-2655. 13-1

(Zone 4)  
IMPERIAL & WOODRUFF, Norwalk. G. NOSACKA (1440-26406, Ext. 1547). UN 4-7673. 13-4

(Zone 5)  
ARTESIA AT COMPTON COLLEGE, Long Beach. M. ZIEHLSDORF (3541-47129, Ext. 2746). 13-5

(Zone 8)  
PALOS VERDES DR. EAST & EASTFIELD, Rolling Hills. (Car pool considered.) JOHN G. McCUE (3410-31500, Ext. 556). FR 7-1184. 13-8

(Zone 10)  
HERMOSA AVE. & 19TH., Hermosa Beach. R. E. BOWMAN (4700-31420, Ext. 1985). FR 2-1236. 13-10

(Zone 11)  
SHELDON & GRAND, El Segundo. (Desire to form or join car pool.) BILL DUVAL (5910-45536, Ext. 2615). 13-11

(Zone 12)  
MALIBU LAKE, Agoura. (Will accept riders from Santa Monica, coast area only.) C. C. FOWLER (9514-29291, Ext. 2151). 13-12

(Zone 13)  
VENTURA BLVD. & TOPANGA CANYON, Canoga Park. (Car pool desired.) WILLIAM R. FAUGHT (8930-32246, Ext. 2717). DI 0-7216. 13-13

(Zone 14)  
BURBANK BLVD. & BUENA VISTA, Burbank. (Car pool desired.) W. W. RUNDLE (1210-29420, Ext. 487). TH 6-5589. 13-14

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA & WESTERN, Los Angeles. H. GREER (3312-53657, Ext. 2775). HO 2-6068. 15-1

(Zone 2)  
WESTERN & CENTURY, Los Angeles. (Can drive alternate weeks.) W. A. SCHWARTZ (3423-30556, Ext. 1751). PL 4-9337. 15-2

(Zone 4)  
CENTURY & STATE ST., Lynwood. (Car pool considered.) ROBERTA J. ALTER (4510-40982, Ext. 2738). 15-4

(Zone 5)  
NORMANDIE & 134TH ST., Gardena. N. GERTRUDE ACKERMAN (3313-12913, Ext. 716). DA 3-1580. 15-5

(Zone 6)  
VERMONT & 169TH ST., Gardena. (Car pool considered.) THOMAS E. COLLINS (3360-51325, Ext. 1889). 15-6

(Zone 8)  
WESTERN & PECK PARK, San Pedro. MARY BUXTON (3830-48586, Ext. 757). TE 1-2620. 15-8

(Zone 8)  
CRENSHAW & 182ND ST., Torrance. (Car pool considered.) LAWRENCE E. MARKS (3275-49542, Ext. 491). DA 3-4932. 15-8

(Zone 8)  
COMPTON & CRENSHAW, Gardena. AMY RAGSDALE (4510-46382, Ext. 2784). DA 3-0421. 15-8

(Zone 8)  
CRENSHAW & 101 HWY., Torrance. (Can take 2 riders.) RAY MALOSH (3832-16340, Ext. 1756). DA 6-2532. 15-8

(Zone 10)  
REDONDO BEACH & AVIATION, Manhattan Beach. (Need 1 or 2 more members for car pool.) JOE HANCOCK (3547-24483, Ext. 1872). FR 6-1656. 15-10

(Zone 10)  
INGLEWOOD & 134TH ST., Hawthorne. PAUL CHRISTOPHER (3533-31255, Ext. 1402). 15-10

(Zone 13)  
BEVERLY GLEN & OLYMPIC, W.I.A. R. F. MATHEWSON (3835-29830, Ext. 1850). GR 7-9830. 15-12

(Zone 13)  
VENTURA & SEPULVEDA, Reseda. (Car pool desired.) DICK EALY (3010-29667, Ext. 2311). DI 4-8849. 15-13

3:45 p.m. — 12:15 a.m.

(Zone 5)  
SOUTH ST. OR CARSON & PIONEER, Artesia. (Car pool considered.) ROBERT A. ENGEL (5568-54990, Ext. 2745). 16-5

(Zone 6)  
PACIFIC COAST HWY. & LONG BEACH BLVD., Long Beach. J. L. WYATT (5587-23066, Ext. 2295). HE 6-7302. 16-6

4:45 p.m. — 1:15 a.m.

(Zone 4)  
U. S. HWY. 60 & SULLATINA, Ontario. (Car pool considered.) G. D. PERKINS (5568-54158, Ext. 2745). YU 6-9548. 16-5

# Northrop Missile Men

(Continued from page 1)

senior technician ratings on guidance testing. Later was in charge of guidance system tests. Married with two children. Hobbies are electronics and boating. From Dayton, Ohio.

**Don Smith**, guidance system analyzer specialist—. Seven-year Norcrafter. Came to Northrop as plaster pattern maker following AF hitch. Worked up to liaison engineer on Snark test fixtures. Married, one child. Enjoys auto racing, hi-fi and photography. Home town: Redondo Beach.

**Ed Sullivan**, (Northrop's own)—. He'll handle Snark opto-electro-mechanical systems. Joined Company in 1954 as precision instrument mechanic. Worked on assembly, balance, optometry and final test of guidance instruments. Married and father of two. Hobbies are photography and flying. Native of Detroit, Michigan.

**Terry White**, guidance system detail specialist—. Joined Northrop in 1954 after discharge from Marine Corps as a sergeant. Worked first as electronic equipment mechanic. Progressed to senior technician and assistant foreman. Total of three years in missile system manufacturing. Worked on construction, tests and troubleshooting. He's single, likes sports. Native of San Diego.

**John Cahill**, also guidance system detail specialist—. He's a former Army man and joined Northrop in 1955. First worked in electronic assembly as technician. Moved up to leadman in electro-mechanical test. Two years of troubleshooting. Married and father of three. A golfer who likes fishing and boating. Hails from North Bergen, N.J.

**Gene Agar**, Snark flight control system specialist—. After tour in the Navy he was technician with two Pennsylvania aircraft engineering firms. Joined Northrop in 1954 as flight control system engineer at Patrick. Aided in launch operations. Married with three children. Enjoys photography and amateur radio. Home town: Colfax, Iowa.

**Doug Marine**, flight control—. An eleven-year Norcrafter.

Joined Northrop as an electrical installer and moved up to F-89 tech rep. Specialized in avionics for five years while in the field. Single and enjoyer of everything. Native of Tooele, Utah.

**Bob Pricer**, airframe and engine specialist—. Six-year Norcrafter. Started with Company as an assembler following ten years in the aircraft industry. Progressed through mechanic, leadman and missile chief ratings during test launchings. Married, no children. Appreciates sports car events. Home town: Roggen, Colorado.

**Oliver Thomas**, Snark electronics man in Navy. Worked on east coast as aircraft electrician. Joined Northrop in 1954 as field electrician. Moved up to leadman. Aided in test launches at Patrick. Married with three children. Prefers hunting. Hails from Palatka, Florida.

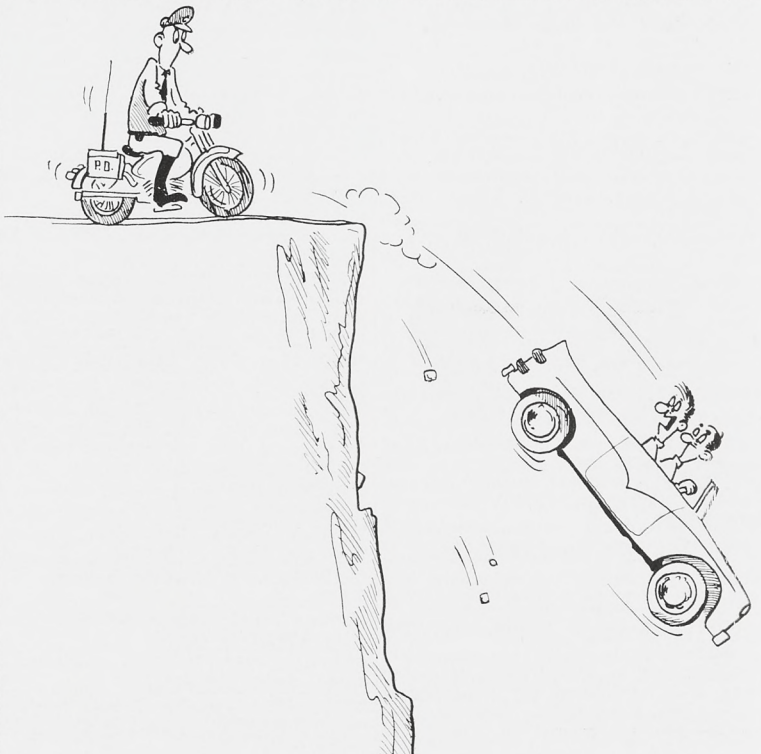
## 20TH CENTURY SCHOLARS SEEK BIBLE MEANINGS

In the light of twentieth century scholarship and in an attempt to make the scriptures more understandable to modern man, bible study groups have come into being. Today, they are found among public and private groups and in industry as well.

At Northrop such a group, known as the Bible Study Club, has been meeting daily for the past eight years. Sponsored by NRC, the Club is inter-denominational and consists of seven separate classes of more than 100 Norcrafters of all faiths. Roy Stahl, an ordained minister and commissioner of the Club, states that the classes meet during lunch period for study and discussion of the bible and the way it pertains to daily life.

Each class has its own leader, four of whom, including Stahl, are ordained ministers. They are Michael Sivulka, Warren LaSelle, and Charles Fitzjarrell. The other leaders are Jim White, Les Anderson and Vernon Begley.

Interested personnel are cordially invited to participate in the Bible Club discussions. See Good Time Table for schedule of meetings.



"We're outdistancing him."

ABDO

4:45 p.m. — 1:15 a.m.

(Zone 4)  
FLORENCE & GARFIELD, South Gate. (Will take 3 riders.) LOUIS DE MARCO (5406-47581, Ext. 2220). TO 9-9596. 18-5

4:45 p.m. — 1:15 a.m.

(Zone 5)  
ARTESIA & DOWNEY OR LAKEWOOD, Bellflower. (Would like 2 riders.) ED REID-SEITH (5353-51141, Ext. 1626). ME 0-6566. 18-5



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

CABINET, steel, galvanized, good for tools, lockable, 10 cu. ft., \$5. PL 4-4384.

MISCELLANEOUS, man's overcoat, 42-44, \$10; wrought iron, \$7; kitchen TABLE, bench, \$5; tray, \$3; salad bowl, \$1.50. GR 7-1539.

OUTBOARD MOTOR, 1950 Sea Bee, 5 hp., overhauled, \$40. PL 5-8866.

ELECTRIC TRAIN, Santa Fe deisel freight, extras, \$15. HO 5-1380.

WASHER, Kenmore wringer, \$25. OS 6-5910.

REFRIGERATOR, 7 1/2 cu. ft. Philco. \$35. FR 4-7546.

FORD, 1950 2-door, \$485. OR 4-9419.

MAGNETO, Scintilla Vertex, for 6 cyl. Chevrolet or G.M.C., starter impulse tach drive. OS 6-8850.

TRAILER, teardrop, oversize, sleeps 3, stove, ice box, water tank, \$250; 21" TV, mahogany console, \$80; K&E Paragon DRAFTING MACHINE, 12"x18" plastic scales, \$70. FR 6-5656.

MISCELLANEOUS, dining set, \$30; 9"x12" rug, \$35; pad, \$5; rubber pad, \$7.50; lawn edger and trimmer, \$15; coffee table, \$5; desk, \$10; kitchen cabinet, \$25. EX 8-0665.

HOUSE, 2-bedroom, fireplace, Torrance, livestock allowed, \$12,900, \$1000 down, or \$11,900, \$2000 down. FR 5-2074.

PONTIAC, 1950 2-door sedan, Hydra-Matic, \$200. OS 6-4597.

AFGHANS, 2, 100% virgin wool, hand crocheted, \$25 and \$20. PL 4-4505.

HOUSE, Palos Verdes, 2-bedroom, fireplace, patio, landscaped, \$21,500. FR 7-1170.

CORNER LOT, Yucaipa, 105'x150', young orchard, 9 miles from Redlands, \$3000. DA 9-6634.

BUICK, 1954 Riviera hardtop, Dynaflo, \$1200. OR 2-2558.

FURNITURE, matching couch and love seat, black chenille removable, washable cover, foam rubber, \$89.50. FR 8-2871.

BOAT, 12', fiberglass, extras, Mastercraft trailer, \$395. TE 1-2555.

WASHER-DRYER COMBINATION, Easy automatic, requires 220 v. power source, model CDF, \$275. PL 4-1318.

MOTORCYCLE, Royal Enfield, 30.5 cu. in., single cyl., new parts, \$175. OR 1-6710.

HOUSE, 2-bedroom, GI resale, unrestricted, Compton, \$9500, \$1000 down. PR 4-8550.

RECEIVER, Hammerlaund HQ-100, speaker, calibrator, earphones, \$150; SKIN DIVING EQUIPMENT, Scott hydra-pak lung, pressure and depth gauges, flippers, mask, preserver, \$200. Box 307.

STOVE, apt. size, \$30. FR 9-9888.

MOTORCYCLE, 1955 BSA Road Rocket, ported, stroked, \$600. VE 7-2127.

DESK, office type, wooden, w/typewriter well, \$20. PL 8-7138.

TIRES, 4, 6-00x16, tubes, wheels, fit Plymouth, \$25; set seal beam LIGHTS, \$5. PL 9-7984.

FORD, 1947 V-8 convertible, \$60. FR 7-1184.

STOVE, \$25. OS 6-8893.

CONTOUR CHAIR, green frieze, \$45. DA 9-2847.

HOUSE, GI resale, 2 1/2 years old, 2-bedroom, den; 1 1/2 baths, carpet, displ. dbl. garage, patio, fenced, landscaped, Hollywood Riviera, \$16,950, \$5050 down. FR 8-2941.

PLYMOUTH, 1948 convertible, \$110. Box 313.

HOUSE, 2-bedroom, R-2 lot, near Centinela Park, Inglewood, \$11,750, \$1500 down. PL 5-0752.

DISHWASHER, automatic, GE Mobil-Maid, 1 year old, \$90. ME 3-6397.

PLYMOUTH, 1953 Cranbrook 4-door sedan, overdrive, \$595. DA 6-5618.

HOUSE, 2-bedroom, den, fireplace, 2-car garage with 1/2 bath, cabana, pool, patio, \$16,500; WASHER, Maytag wringer, Western Holly gas STOVE, \$25 each. DA 9-3436.

ROADSTER, 1954 Singer, FR 5-7387.

BOAT, 16' Philippine mahogany V-8 inboard, \$400. FR 6-3524.

STOVE, O'Keefe & Merritt, \$65. DA 6-6598.

DINING SET, Rockwood maple, 4 chairs, \$65; Leroy LETTERING SET, 7 templates, extras, \$45; C.H.P. leather motor JACKET, 40-44, \$20. ME 0-6618.

BUICK, 1950 Special 4-door, Dynaflo, extras, \$200; 1955 Admiral 1 1/2 cu. ft. REFRIGERATOR, cross top freezer, \$140; auto. WASHER, bolt down, \$35; wringer WASHER, \$50; valve GRINDING MACHINE, \$110. DA 4-0673.

VACATION TRAILER, 1957, electric brakes, \$800. DA 9-4065.

TV, 21", mahogany console. PL 5-3407.

## FOR SALE

FURNITURE, 6 mo. old, 11' Norge refrigerator, freezer chest; 3-pc. living room suite; 5-pc. wrought iron dinette; Wedgewood Royal Rheem gas range; Kenmore wringer washer, 5 yrs. old, \$505 balance, no equity, take over payments \$25.22 mo. Box 306.

MOTORCYCLE, 1950 Triumph T-Bird. OR 2-2093.

LOVESEAT, bed divan. OS 6-8788.

PUPPIES, blonde Cocker, 6 weeks old, pedigree, no papers, \$20. FR 9-9261.

RUG, 10'x14' woven wool, \$50; 5-pc. DINETTE SET, \$45. Box 304.

AUTO-GYRO, home-built, 70 hp., 2-cycle engine, trailer. Box 305.

CHEVROLET, 1949 convertible, needs tires, \$200. FR 4-6377.

HOUSE, Palos Verdes Riviera, 3-bedroom, 2 baths, family room, 2 fireplaces, built-ins, 9 mo. old, FHA 4 1/2 %, \$24,900. FR 8-2130.

BUNK BEDS, springs and mattresses, \$30. FA 8-5958.

FURNITURE, living room. OR 2-4081.

CHEVROLET, 1950 1/2-ton pickup truck, recently painted, upholstered, \$450. NO 1-6091.

FORD, 1955 Fairlane 2-door, Ford-O-Matic, \$1395; 14' BOAT, aux. motor, trailer, car hitch, \$500. FR 5-7714.

PARAKEETS, 2, male and female, chrome training cage, \$12; rug SWEEPER, \$10. FR 9-2659.

DINING SET, modern drop leaf, blonde oak, \$95. OR 1-6091.

CHEVROLET, 1952 2-door Bel Air sport coupe, Poweralide, \$585. PL 5-1085.

DOUBLE BED, maple, box springs, mattress, \$30. DA 9-7016.

HAIR DRYER, professional type, on stand, \$15. OS 5-7740.

MOTORCYCLE, 1948 Ariel V.H. Red Hunter, recent overhaul, \$285; TOOLS, Kennedy, various wrenches, chisels, drills, etc., \$65. EX 3-2543.

BEDROOM SET, blonde ash, mattress, spring, \$125. FR 5-3149.

OLDSMOBILE, 1955 Holiday 98 sport coupe, full power, Hydra-Matic. AX 4-7356.

PONTIAC, 1950 convertible, \$125. DA 4-1593.

ELECTRIC ORGAN, OS 6-9637.

DESERT PROPERTY, 40 acres near Lucerne Valley, virgin soil, unimproved, \$350 per acre. OS 6-2979.

REFRIGERATOR, Coldspot, 11.7 cu. ft., \$40; 1942 Harley-Davidson 45 MOTORCYCLE, \$125. OX 3-0998.

FURNITURE, desk, end tables, coffee table, magazine rack, platform rocker. DA 9-6209.

FORD, 1949 V-8 4-door, \$175. FR 5-3914.

APPLIANCES, 5 yr. old, GE refrigerator, 9 cu. ft., \$85; Kenmore gas range, \$70; Westinghouse electric dryer, \$55. FA 1-0836.

GOLF CLUBS, Wilson, 3 woods, 5 irons, bag, \$35. EX 9-2530.

SEWING MACHINE, elec., home cabinet, walnut, attachments, \$75; KITCHEN NOOK, custom, chrome table, 2 upholstered benches, seats, backs, \$40; mahogany coffee TABLE, with glass, \$10. PL 8-2470.

PRESS CAMERA, Burke & James, 2 1/4 x 3 1/4. Compur shutter, extras, \$85. FR 2-0026.

CHEVROLET, 1950 2-door sedan, new seat covers, Poweralide, \$275. AX 4-7356.

CHEVROLET, 1941 club coupe special deluxe, dual exhausts, new transmission, moderately customized, undercoated, extras, \$200. OS 5-4918.

FORD, 1953, \$300. EX 7-3104.

NASH, 1955 Metropolitan. PL 2-5547.

GUNS, model 20 pump 12 ga. shotgun; 74A automatic .22 Winchester rifle, 4X scope; 4 rifle gun cabinet, cleaning equip., shells. OS 5-2594, days.

BEDROOM SET, 4-pc., mirror, aray modern gum, \$80. EA 2-3122.

BICYCLE, custom, lightweight touring, 9 speeds, \$125. FA 8-1683.

CHEVROLET, 1940, new battery. OS 6-8371.

LAPIDARY, 24" Frantom slab saw complete, \$295. OR 4-2352.

CHRYSLER, 1952 convertible, new brakes, drums, \$400. OR 4-8775.

FORD, 1956 Country Sedan, Ford-O-Matic. FR 6-2269.

TYPEWRITER, 1956 Smith-Corona, movable stand, \$125. OS 5-0569.

RIFLE, 30.06, case, \$150. Box 302.

PONTIAC, 1949, out of state license, \$125. OS 6-8841.

BEDROOM SET, blonde, box spring and mattress, 6 mo. old, \$200. OR 1-3229.

PIANO, Gulbransen maple spinet, \$500; boy's 26" racing BIKE, \$20. OR 1-8836.

## FOR SALE

RADIO-PHONO, mahogany, Westinghouse console, \$50. OS 5-2594.

HOUSE TRAILER, 20', for backyard living, furnished. OR 2-5647.

OLDSMOBILE, 1951 98, HO 2-6968.

AUSTIN HEALEY 100, 1956, extras, \$2550. FA 8-2878.

DINING CHAIRS, 6, \$2 ea. OS 5-0576.

CHEVROLET, 1953 1/2-ton pickup, built-in tool boxes, oversized tires, \$750. FR 9-5725.

HOUSE, 3-bedroom, furnished, near schools. LE 9-8554.

FORD, 1940 5-window standard coupe, custom headliner, body and frame only, \$25. Box 303.

TELESCOPE, 3", case, fittings, \$75. OS 6-3448.

MG HARDTOP, 1950-1953, custom made. LA 2-6430.

WASHER, 1957 deluxe Filter-Flo auto. GE, \$200. PL 4-1775.

THUNDERBIRD, 1957 Ford hardtop, power brakes, steering, EX 9-8291.

STUDIO COUCH, green plaid, makes double bed, \$50. PL 4-6146.

COOKWARE, 17 pieces, stainless steel, never used, \$79.95; Holiday Melmac DISHES, \$54.95, cash or terms. TO 9-9596.

STOVE, gas, apt. size, \$40; COUCH, opens to bed, \$40; 2 step end TABLES, \$7; upright PIANO, \$80. FR 6-3600.

JR. DINING SET, table, 5 chairs, pad, mahogany Duncan Phyfe. PL 6-7163.

MATTRESS PAD, contour, for king size bed, \$4.50. OR 7-2400.

RANGE, Hotpoint electric, \$175. NE 1-8563.

BUICK, 1955 special, \$1500. FR 9-3572.

TABLE LAMP, chartreuse ceramic, shade, \$7. OS 6-3326.

MARE, black, 10 yrs., gentle, trophy and ribbon winner, can be ridden English or Western. OS 6-6865.

DINETTE SET, chrome, formica top, \$25. FR 9-0706.

CAMERA, Rollei-cord V, case, meter, flash, \$90. GE 8-5981.

FORD, 1955 convertible, Ford-O-Matic, take over payments; skin diving EQUIPMENT, Bel-Aqua, 2 pc. dry suit, \$15; deluxe rubber powered GUN, \$15; MASK, \$2; PACK, \$1. DA 6-0864.

HOUSETRAILER, 27' Admiral, elec. refria., elec. brakes, newly painted, \$350. Box 316.

OUTBOARD MOTOR, 16 h.p. Scott Atwater, shift, power prop. 50 hrs., \$125. PR 4-8550.

MOTORCYCLE, 1954 Harley Davidson, 74 cu. in. o.h.v., full equipment, \$700. FA 8-0640.

SKUNK, "Poqo", 6 mo. old. \$20. OS 6-6126.

SEWING MACHINE, Brother straight needle, portable, \$95. PL 7-3774.

BOX SPRING, MATTRESS, Van Vorst, full size, \$40. DA 6-0340.

AIRPLANE, 1937 Taylor Cub for rebuilding, nearly ready for re-cover, dual ign. 40 h.p. cont., \$325; with 75 h.p. cont., \$375; 1951 PONTIAC 8 2-door sedan, Hydramatic, new paint, headliner, \$350; TV, 20" RCA, 17" tube, misc. parts, \$25. DA 3-1026.

COFFEE TABLE, limed oak, modern step design, \$30; ENGINE, Model A Ford, \$25. DA 9-1705.

WASHER, 1956 GE Filter-Flo, used 9 mos., \$150; 9'x12' wool RUG, pad, \$30. TE 1-2077.

HOUSE, 3-bedroom, near school, shopping, Redondo Beach, \$10,900. Box 315.

DINING SET, 8 p.c., limed oak, \$75; tilt-back DIVAN, \$35; Hamilton Beach MIXER, \$10. TE 2-0578.

RING SET, size 5, 7 diamonds set in white gold, \$150. OR 4-5192.

TRAVERSE RODS, DRAPES, aray, 52"x80". FR 2-5424.

HOUSE, Long Beach, 2-bedroom, carpet, playroom, \$18,000; MIDGET RACERS, 3 thimble-dromes, gas engines, extra wheels, tires, need work, \$15 all. GA 7-1835.

CONSOLE, Packard-Bell hi-fi, phono, radio combination, mahogany, \$175. OR 7-2723.

TIRE CHAINS, pair 600x16, never used, \$6; roller SKATES, boys size 6, \$7. PR 4-3503.

HOUSE TRAILER, 25' Rod Reel 1955, must sell, \$1750. OR 1-9767.

DRAFTING MACHINE, Bruning, 2 scales 12" & 18", 4 yrs. old, \$70. WE 1-8478.

HOUSE, 2 bedroom, 8 yrs. old, \$2000 down, \$12,500. OS 6-8857.

CAMERA, Exakta IIA, F/2.8 Zeiss Tessar, viewfinder, case, \$230. CI 3-6589.

MISCELLANEOUS, Calif. bedroom set, inner springs, mattress, vanity, mirror, bench, nite stand, chest, \$50; oak ext. table, 4 chairs, \$15; single bed, box, inner spring mattress, \$15. FR 6-6020.

DRAFTSMAN'S CHAIR, Cramer deluxe, \$40. OS 6-7671.

REVOLVER, 32 Smith & Wesson, holster, shells, \$45. PL 4-7891.

MIDGET SHETLAND PONIES, registered, stud & mare, broken to reins & saddle, \$400 stud, \$350 mare, EM 2-8360.

BOAT, 15' Performer, 33 h.p. Scott-Atwater, trailer, elec. starter, lights, \$795. NE 1-2275.

TIRES, 5 6.70-15, \$3 each; ABC WASHER, wringer, \$50. OR 4-5652.

## FOR SALE

GUNS, H&R .22 revolver, 2" & 4" bls.; Mossberg .22 semi-auto, RIFLE, 4X scope; Russian 7.62mm rifle, all for \$65; lever action, drop block, single shot .22 RIFLE, short barrel, \$10; brass shotgun CASES, 12 ga., caps, wads & loading tools, \$10. FR 5-8804.

MISCELLANEOUS, kerosene lanterns, 2, \$1 each; 1/4 h.p. electric motor, \$5; car air conditioner, \$28; child's scooter, \$1; Kenmore vacuum cleaner, \$10. OR 4-2352.

DINING TABLE, blonde oak, 6 uphol. chairs, \$135; matching blonde coffee and end TABLES, \$25; platform ROCKER, \$25. FR 2-4281.

CAMERA, Bolex H-16, 16mm, case, filter, 15mm wide angle, 25mm f1.9, 102mm telephoto lens, \$375. PL 7-1184.

MESSERSCHMITT, 1956 deluxe. OR 4-3305.

HOUSE, custom built, redwood, 3-bedroom, family room, 1 1/2 baths, drapes, disposal, water softener, copper plumbing, 2 car garage, quest room attached, fenced, S. Redondo, \$17,850. FR 4-7155.

WASHER, automatic, \$35. RE 1-7492.

MISCELLANEOUS, set 1940 Lincoln brakes, backing plates, new lining, wheel & master cylinder, \$20; 1939 Ford transmission, Lincoln Zepher gears, \$20; 1940 Lincoln Zepher radiator, \$10; 1940 Ford radiator, \$10. FR 2-0026.

RUGS, 9'x12' viscose & wool, \$30; 8'6"x12' Wilton, w/felt, \$20. FR 8-2714.

PUPPIES, 8 wks. old, mixed Collie & Shepherd, wormed, have puppy shots, \$15 males, \$10 females. NE 5-5487.

TRAIN, American Flyer locomotive, track, transformer, cars, \$75. AX 3-0377.

WASHER, Frigidaire, automatic; platform leather ROCKER, oval RUG & pad. AX 1-0606.

ELECTRIC RAZOR, Norelco, \$15; STENO-TYPE MACHINE, case, needs cleaning, \$25. DA 6-9242.

BOAT, 16' Curt-Craft inboard, new Ford V8 60 h.p. engine, V drive, glassed; gas RANGE, griddle, \$35. OS 6-7936.

HEATER, arvin auto. electric, thermostat control, \$15. TE 5-1276.

DODGE, 1937 coupe. PL 5-2707.

FUR COAT, size 16-18, \$15. OS 5-2617.

CADILLAC, 1954 62 coupe, full power, \$2450; BOAT, 18' Chris Craft express cruiser, trailer with winch, equipment for Coast Guard approval, new Royal Scott 40 h.p. motor, \$1750. NE 2-6644.

MICROMETER, 2" Slocumb, \$7; men's shoe roller SKATES, size 7, \$10; Kenmore portable electric DISHWASHER, \$40. FR 4-0527.

TV, 1955 17" Admiral table model, w/stand, \$50; matched set Walter Hagen GOLF CLUBS, 7 irons, 2 woods, \$20; Motorola portable radio, \$5; Zenith combination radio-auto, RECORD PLAYER, \$25. DA 4-2850.

PLYMOUTH, 1949 super deluxe 4-door; Thor auto. WASHER; Imperial portable electric SEWING MACHINE; Underwood portable TYPEWRITER, OR 8-9701.

LUGGAGE TRAILER, 4'x4'x8', \$75. NE 2-0323.

## WANTED TO BUY

RECEIVER, transmitter or converter for 2 meters, for mobile use, 12 volt system. Box 312.

FURNITURE, entire household. FR 2-9051.

POWER SAW, portable, heavy duty. HE 8-1095.

STATION WAGON, 1955-1956 Ford, cash. OS 5-4134.

CAR, 1956-57 Ford or Chevrolet, want to take over payments. OR 8-3150.

HUTCH, maple, 36"-40" wide. OS 6-9860.

MOTORCYCLE PARTS, generator, voltage regulator, buddy seat, for 1947 Triumph twin. OS 6-8095.

MANIFOLDS, 1 pair water cooled marine exhaust, for Ford engine. OS 5-2594, days.

TONNEAU COVER, 1957 Ford convertible. FR 4-4140.



# SPORTS

*The Northrop News*

## Car Club Tabs Hanna, Flude Best for 1957

Two Northrop sports car enthusiasts were named by the Southern California Sports Car Club as champion driver and navigator for 1957. They were Bill Hanna and Dick Flude, respectively.

Selection for the honor was based on the best five out of six rallies in which the team participated. Covering a total of 1900 miles, Hanna and Flude had an overall error of two minutes and 47 seconds for the six rallies in which more than 1000 cars competed.

Their best five rallies included — two first places, one second place, one third and one fourth.

In other sports car news at Northrop, new officers were elected for the coming season. Voted to office were Ward Brannon, vice commissioner; Bert Johnson, activity chairman; and Don Black, trophy-safety chairman. Re-elected as rallye team captain was Hal Guest. Jack Carlson was named gymkhana team captain and Karl McCready was elected 1958 rallye master.

## MODEL CRAFTERS READY AIRCRAFT FOR INDOOR TEST

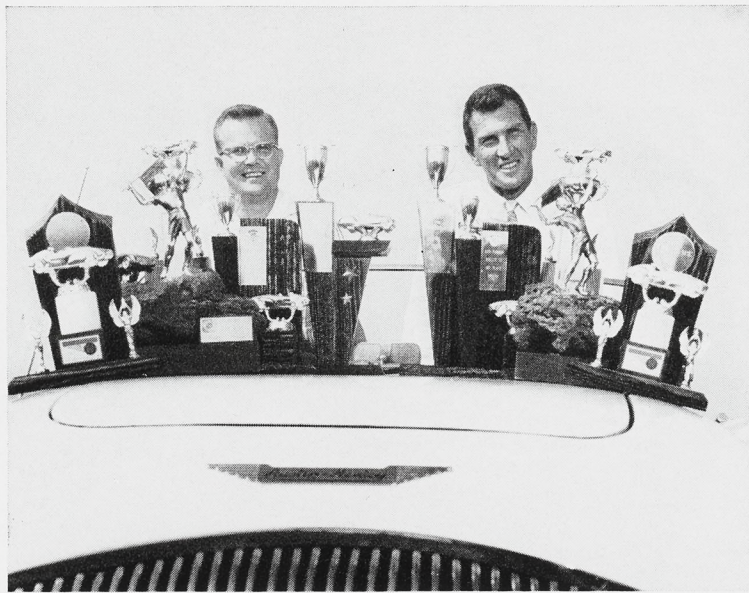
The in-commission rate of planes is expected to be high November 4. They'll be scale model, die cut class, rubber powered aircraft, though.

An indoor flight contest for the models is being planned by the NRC Model Craft Club, according to Jerry Greasby, commissioner. The competition will be held in the ballroom of the NRC Clubhouse at 7:30 p.m. on the above date.

Earlier this month the Club constructed scale model gliders of the Voodoo jet. A distance and duration flight contest was held with each model launched from a six foot level. Tom Ewing of Maintenance Department was winner and recipient of a gas powered model.

## Ski Club Plans Dance

Norcrafters members of the Hals und Beinbruch Ski Club are invited to attend the Club's Halloween dance, November 2. Address is 119 Aviation Boulevard. Time, 6:30 p.m. Admission, 75 cents.



**CHAMPION SPORTS CAR PILOTS** — Dick Flude, left, and Bill Hanna were named best in Southern California.

## Excitement In Mule Canyon As Prospectors Make Finds

Western adventure in the tradition of the past was relived again by members of the NRC Gem and Mineral Club. The Norcrafter counterparts of the West's storied prospectors descended into Mule Canyon in the Calico Mountains near Yermo on their latest field trip earlier this month.

Forty-five members and their families comprised the expeditionary force in search of fluorescent coemanite crystals, selenite, celestite and strontianite, according to Ray Cole, commissioner.

To the amateur mineralogists these things mean excitement. And, excitement there was! The group returned with excellent specimens of coemanite with inclusions of celestite crystals and strontianite. Cole reported that celestite crystals up to one-half inch thickness were found

in addition to specimens of selenite ranging from one to two inches in thickness. Good price-value modules were also among the findings.

## HALLOW'N PARTY FOR CHORUS KIDS

The NRC Mixed Chorus likes to sing, says commissioner Bill Porter. And, we like to have parties, he adds, as plans for the November 2 Halloween Party get underway.

Designed for the children of Chorus members, the affair promises fun for all with games, prizes and refreshments. Starting time for the party is 8 p.m. in the Fountain Room of the NRC Clubhouse.

## Flotilla Forms Tonight, Marks Boating Milestone

A milestone in the annals of the NRC Boat Club takes place tonight. This is the date of official activation of U. S. Coast Guard Flotilla 65 with 21 members of the Boat Club. Charter presentation and installation of officers is planned for 8 p.m. at the NRC Clubhouse.

Norcrafters Jack Shannon will be installed as commander, John Slack, as vice commander, and Fred Wheeler, as training officer. On hand for the ceremonies will be officials of the U. S. Coast Guard and representatives of Northrop management.

All Norcrafters are invited to attend the colorful event. This marks the first time that a Coast Guard Auxiliary flotilla has been activated in the 11th District in ten years.

Open invitation is also extended to all Norcrafters to join in the fun of an authentic Hawaiian Luau this Saturday, October 26, at the NRC Clubhouse. There'll be dining, dancing, and entertainment from 7:30 p.m. to 2 a.m.

Tickets are on sale by members of the Boat Club and at Personnel Activities Office, Plant I. Steve Sabo, Club commissioner, reports that tickets are al-

ready getting scarce and early reservation is suggested. Price is \$2.75 per person.

Next activity of the Club will be participation of the outboard fleet in the 90-mile Salton Sea race. Date is Sunday, November 10. This event is open to all outboarders. Full details are available at Personnel Activities Office, Plant I, call 2784.

## CALL TEAMS FOR NRC BASKETBALL SEASON OPENING

With the onset of the winter sports season came the recent announcement of the basketball leagues. Both dayshift and nightshift teams are being formed. state John Mihelich and Dave Carney, commissioners.

The call is issued to any Norcrafter not already on a team who is anxious to participate to contact the Personnel Activities Office, Plant I. All rosters are due in by October 25.

Nightshift Norcrafters are busy hustling teams for their league. They'll be playing at Sportsman's Park, corner of Western and Century, each Monday from 9:30 a.m. to 12:30 p.m.



**NEW TOASTMASTER** 212 officers, from left, John Walker, publicity; Earl Hagg, treas.; Jim Morton, ed. v-p; Jim Lynch, past pres.; John Langdon, pres.; Herb Ripley, sec.; Will Tolles, admin. v-p; and Jack Apodaca, sergeant at arms.

## Informal Get-Together Set For All NRC Toastmasters

Toastmasters is more than a club, it's an education. But Saturday, November 2, it's going to

be a dinner-dance hobo party.

Four Northrop Toastmasters Clubs and the Toastmistress Club are planning their first joint get-together. It's an informal affair and all attendants are invited to appear dressed in hobo garb. Reason? A hobo king and queen will be selected and door prizes awarded.

Scene will be the NRC Clubhouse in Hawthorne with festivities due to get underway at 7:30 p.m. First item on the program will be buffet service by the Northrop Toastmistress Club 598. Dancing and entertainment will follow.

Family members and guests are invited. Tickets may be obtained by contacting members of Northrop's Toastmasters Clubs 1398, 2583, 212, and 1058, or the Toastmistress Club. Early reservation is suggested.

Northrop's newest Club, the Norcrafter 2583, held its charter night and installation of officers recently. Norcrafter and Area Seven governor Doug Johnson presented the charter and Toastmasters International District 50 governor Max Sacks conducted the installation.

Officers of the new Club are: Howard Cornelius, president; Ernie McNeil, educational vice president; Walt Brown, administrative vice president; John Grieco, publicity chairman; Frank Sass, secretary; Larry Knight, treasurer; and John Donnelau, sergeant at arms.

Nor-Air Toastmasters 1398 also staged an installation at their semi-annual banquet this month. Doug Johnson was installing official.

## NRC Good Time Table for November

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days)** Jack Duer  
Meet Wednesday, 6:30 p.m. Archery classes now in session.

**ART CLUB (days)** Milton Maldonado  
Meet in Annex every Thursday, 7:00 p.m. Models furnished by NRC. Newly formed sculpture class meets every Wed., 7:30 p.m.

**BIBLE STUDY, Roy Stahl**  
Plant 1—Daily, 11:30-12:15, Training Conf. Room, Tool Design Bldg., 11:00-11:45, 5587 Conf. Room.  
Plant 11—Mon. & Thurs., 12:15-1:00, Conf. Room 2.  
Plant 111—Daily, 12:15-1:00, Conf. Room 5.  
Torrance—Tues. & Thurs., 11:30-12:15, Bldg. K2 Conf. Room.

**BOAT CLUB, Seve Sabo**  
Meet 1st Wednesday of month, 7:30. Night shift meets 3rd Thursday of month, 2:30 p.m. Water Ski Club Days meets 3rd Thurs., 7:30 p.m. Family Outboard Race—Nov. 10, Salton Sea.

**BOWLING (days)** Lloyd Forstrom  
**BOWLING (nights)** Charlie George  
Winter leagues now formed.

**BOY SCOUTS, Stan Morris**  
Sea Scouts, Intermediate, Cub Scouts. All Norcrafter boys welcome.

**CAMERA CLUB (days)** Steve Marsteller  
Meet 1st & 3rd Wednesday.

**CAMERA CLUB (nights)** Gene Beck  
Meet 1st and 3rd Sat. of month, 8:15 p.m.

**FISHING (day and night)**  
Register of fish for NRC awards with cards available at Personnel Activities.

**GEM & MINERAL CLUB (days)**  
Raymond Cole  
Minerology class now in session. Meet every Thursday, 7:00 to 9:00.

**GEM & MINERAL CLUB (nights)**  
Victor Lincoln  
Meet 1st and 3rd Wed. of month, 1:30 p.m.

**GOLF (days)** Charles Pinegar

**GOLF (nights)** Leo Baker  
Individual practice for Christmas Tournament.

**GUN CLUB (days)** Ron Reis  
Meet 1st Tues. of month, 7:30 p.m., Clubhouse. Meet 3rd Tues. of month at Centinela Pistol Range.

**MIXED CHORUS, Bill Porter**  
Meet every Tues., 7:30 p.m. All Norcrafters welcome.

**MODEL CRAFT CLUB, Jerry Greasby**  
Meeting 1st Monday of month.

**MODEL RAILROAD, Jack Wilson**  
Meeting every Thursday evening from 7:00 to 10:00 p.m. in Annex. Visitors welcome.

**PHILATELIC, Robert Van Rensselaer**  
Meet 2nd and 4th Mondays, 7:00 p.m.

**RADIO CLUB, Phil Kramer**  
Meet last Thursday of month in Annex, 7:30 p.m. Radio Code Class meets every Wednesday evening, 7:30 p.m. NRC's Station is W6VPZ.

**SKEET CLUB, Harold Bowers**  
Meet every other Saturday at Long Beach Dominguez Gun Club on Artesia Blvd., 10:30 a.m. October 5 & 19.

**SKIN DIVING (days)** Ralph Gonzales  
Meet 3rd Monday of month at 7:30 p.m. Nov. 17, Catalina Island Dive—Contact P. A.

**SKIN DIVING (nights)** Lillian Kemble  
Meet 3rd Wednesday of month, 1 p.m. Nov. 17, Catalina Island Dive—Contact P. A.

**SPORTS CAR CLUB, Bill Hanna**  
Meet 2nd Thursday of month, 7:30 p.m. Flight Test Specialty, Nov. 17.

**SQUARE DANCING, Roy Jackson**  
Beginners class starting 2nd, 3rd, 4th, and 5th Sundays, Gardena Barn, 15016 Daphne St., Gardena, 3:00 to 6:00 p.m.—Regular Sessions 1st, 2nd and 4th Sundays at 8:00 p.m.

**SURF FISHING, John Pawlicki**  
Meet 1st Tuesday of month, 7:30 p.m.

**TOASTMASTERS 212 (days)** John Langdon  
Meet every Thursday evening, 6:30 p.m., "The Cockatoo".

**TOASTMASTERS (days)** Howard Cornelius  
Meet every Tuesday evening, 6:15 p.m., "Kims".

**TOASTMASTERS (nights)** Ray Grish  
Meet every Thursday, 12:30 p.m., "Gondolier", corner of Imperial Highway and Prairie.

## FOR THE LADIES

**BOWLING (days)** Joan Sittauer

**BOWLING (nights)** Mary Mimmough  
Winter leagues now formed.

**GIRLS SCOUTS, Helen Maupin**  
Mariners, Intermediates, Brownies. All Norcrafter girls welcome.

**TOASTMISTRESS, Vicki White**  
Meet in NRC Clubhouse Board Room 1st and 3rd Thursday, 7:00 p.m.



# Northrop News Pictorial

## She Smiled a Modest Smile

Sometimes you meet this kind of a person and you think—Norcrafter Dorothy Heath is confined to a wheel chair. She's a paraplegic, paralyzed from the waist down. Works at Mariposa in the Materiel Division.

She drives a specially equipped car to and from work and shares the ride with three other Norcrafters—Joanne Irwin, Alice Shewmaker and Charlotte Bolter. They're always on time, too.

Dorothy's riders don't chip-in on gas expenses. She won't let them!

But she does make one requirement—that they each put two dollars a week into a fund for their families. For Alice and Charlotte, this is a Christmas shopping fund; for Joanne, a house tax fund.

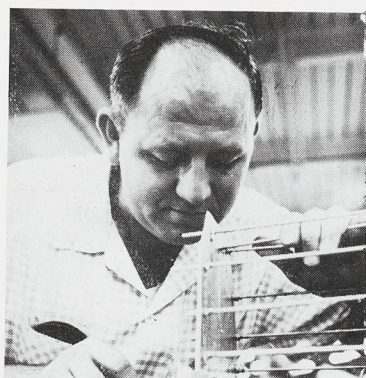
What do the riders say about the idea? They think it's "great." Joanne, who's been riding with Dorothy for three years now, explains that two dollars a week mounts up to a helpful fund each year.

When asked why—Dorothy just smiled a modest kind of smile, a smile of thoughtfulness.



**DOROTHY HEATH**, front, makes one requirement of Joanne Irwin, Alice Shewmaker, and Charlotte Bolter.

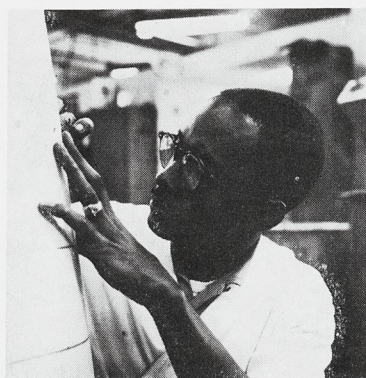
## Scenes from the Shop



**CHARLES MELEG**, inspector, Plaster Shop and Foundry, checks templates to go into a plastic mock-up.

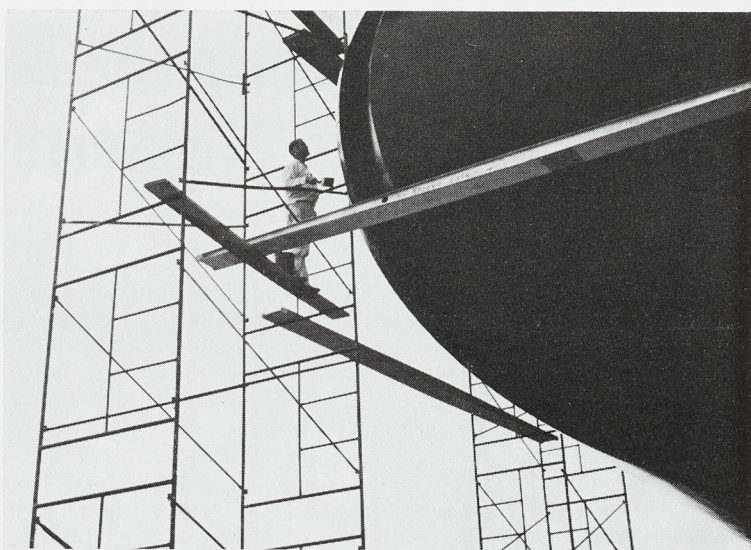


**TOM CRIVELLO**, plaster pattern maker, mixes plaster preparatory to casting via plaster splash method.



**NEWELL EVANS**, laboratory technician, chemistry student, does a new layout. Newell is also a drummer.

## The Brush Treatment



**BRAND NEW** paint job for the wind tunnel! Twelve men on the job, 220 gallons of paint to apply in three coats. Tunnel, which measures approximately 4500 square yards, was washed with dilute acid, then got primer, is being finished with final coats. Bob Shoots on scaffold.

**VENDOR** is Klass Brothers, painting contractors. Fore-ground, Bob Shoots again, Harold Emmons up above.



**BIG DROP-HAMMER** in the Sheet Metal department, Norcrafter Cliff Harper at the stern. Cliff is forming a job for a Manufacturing program. The rope, measuring some six and one-half inches around, two inches across, is nylon. About the size of a man's wrists. Fool-proof safety devices characterize all hammer house machinery.

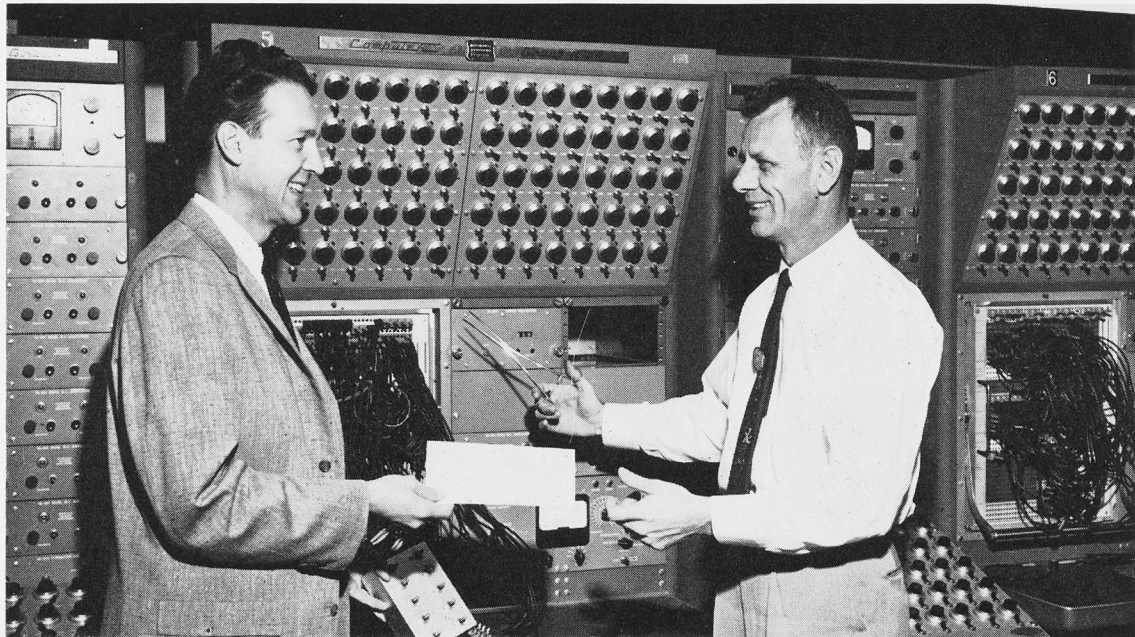




# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, November 6, 1957



FOR BILL TAYLOR, right, \$1000 for his F-89J gust study suggestion. Lee Ohlinger, chief, Computing and Data Handling Services, presents the check. Bill's suggestion did away with tedious hemostat changing of wires on research computers. (Story, this page.)

## Security Reorganization With Service Objective

Reorganization of the Security and Protection Services departments, effective November 4, has been announced by Company bulletin.

Highlight of the changeover is the strong emphasis being put on "services" in the three major divisions of security — Security Services, Protection Services and Fire Services.

Reason for the change was outlined to the News by Paul H. Crews, director. "Our security job is to satisfy the demands of the security contracts we have with the Federal Government," he stated. "These contracts are signed and agreed to just like production, engineering, and research contracts. We must live up to our commitments.

"Also, we must meet the increasing security requirements now being requested by Washington. This calls for proper management of our resources. The department reorganization is essentially a new framework to assist us in supplying the best security services in the industry

to Northrop divisions wherever needed.

"Big factor in our new organization," says Mr. Crews, "is planning. We also must be able to anticipate and be ready for any security job required."

Department name changes, which were outlined in the Company bulletin, strongly stress the service feature of the reorganization such as Plant Security and Protection being changed to Security and Protection Services.

"Security is everybody's job," Mr. Crews stated. "We are here to provide the program and to help and support operational activities in all security ways, and to supply technical advice needed to carry out the program.

"One of our first areas demanding immediate attention is in security itself. All Norcrafters are asked to be especially alert in admitting visitors to the plant, in obtaining security clearance for Northrop people, and in the classification of documents. Bro-

(See SECURITY, page 2)

## Dr. Ballhaus Will Present Paper at IAS Dallas Meet

### WENDELL HARTER NAMED TO S-12 COMMITTEE POST

Reliability Norcrafter Wendell Harter, engineering specialist, has been elected vice chairman of the Society of Automotive Engineers S-12 Shock and Vibration Committee.

Committee work is in the area of design methods development for protection of airborne electronic equipment in shock and vibration environment.

Committee membership consists of engineering men from aircraft and allied industries. Meetings are held downtown on regular schedule and serve as industry team effort to produce tops in reliability for the nation's

Doctor W. F. Ballhaus, Northrop, Inc., vice-president and general manager, Nortronics, will present the paper, "Application of Weapon System Management Principles to New Problems", at the Institute of Aeronautical Sciences meeting in Dallas this week.

The IAS will convene this time for its first national midwestern meeting. A new series of yearly meetings, the next midwestern will be held in St. Louis, May 12 to 14, 1958.

Lt. General Samuel E. Anderson, USAF, commander Air Research and Development Command, will be guest of honor and principal speaker.

military.

Harter is a 13-year Norcrafter.

## Shareholder Annual To All Personnel

Annual shareholders report of Northrop operations for the fiscal year ended July 31, 1957, was mailed to all personnel of the Company last Friday.

President Whitley C. Collins reported earnings of the Company were more than ten per cent higher than in the preceding year. He said significant progress in guided missiles and manned aircraft projects improved Northrop's position in the industry.

Total sales for the fiscal year were \$281,260,670 against \$322,513,290 for the previous year. Net income was \$5,522,595 compared with \$4,965,071 for 1955-56.

During the year the Company began production on the \$73,000,000 contract for the Snark, which will be assigned to operational units of the Strategic Air Command.

Company guided missile work also includes the Hawk missile at Northrop and Anaheim, and Radioplane Division's prime research and development contracts for the Air Force.

Progress on the T-38 supersonic jet trainer airplane has advanced to the point at which orders and subcontracts for components are being placed and the Company anticipates that it will soon be authorized to move into volume production. The lightweight, twin-engined craft may become the principal trainer in the defense inventory, Mr. Collins said.

These top projects—the Snark, Hawk and T-38—represent relatively low-cost solutions for important defense programs and are thus in tune with present economic restrictions which have confronted our national defense program, Mr. Collins stated.

In a personal letter mailed with the report, Mr. Collins commended members of personnel for their contributions to a successful business year. He pointed

(See REPORT, page 2)

## PAY BOOST FOR HOURLY FOLK

Hourly paid Norcrafters received a two-cents-an-hour raise, effective last Monday, due to increase in cost-of-living index, it was announced by Robert R. Miller, vice president and general manager.

The raise was based on the COL index of September 15 over June 15.

Next reading will be the index of December 15; changes to be effective February 3, 1958.

This is the fourth cost-of-living wage increase, totalling 12 cents an hour, awarded Northrop Division personnel in 1957. A six-cent-an-hour increase was granted in January, one cent was added in April, and an additional three-cent increase was awarded in August.

## \$1000 SUGGESTION—!

# TAYLOR WINS TOP \$ \$ AWARD

Bill Taylor, jr. last week received a \$1000 award for his suggestion to have switches in computer plugboards wired for sign changes, it has been announced by Cecil Callaway, Suggestion supervisor.

The \$1000 award is the maximum grant that can be made under the Northrop Suggestion Award Plan.

Taylor, who was classified as a computer analyst in Department 3330, Computing & Data Handling Services, Lee Ohlinger, chief, at the time of his successful suggestion, has subsequently been promoted to senior engineer.

Only seven other Norcrafters in Company history have been able to achieve this top-most honor.

## AF Captains In Training At Northrop

Three Air Force captains have left their military surroundings for a year and are now Norcrafters, complete with badges. But they're still on the Air Force payroll.

The new Norcrafters are Captains Edward A. Galvin, Jon W. Launderville, and Joe D. Johnston. They are participating in the U. S. Air Force Institute of Technology "Training With Industry" program. Under the program, selected officers are placed with one of the major airframe manufacturers holding research and development or production contracts for new weapon systems.

(See TRAINING, page 2)

**TRAINING WITH INDUSTRY** — Three USAF officers, Norcrafters for a year, meet with Dr. James M. McClelland, manager, Customer Training. They are Captains Jon Launderville, Edward Galvin, seated, Joe Johnston, standing. Three are studying all phases of Northrop operations.





# Faster, Higher Flying Airplanes Still Need Brakes to Come Down

Designers of the Air Force's new supersonic trainers, fighters and bombers have their problems. They not only have to concern themselves with an airplane that will go higher and faster, they've got to design a method for stopping the "bird" when the mission is over.

In fact, the clean aerodynamic

## M-C Fathers Plan Turkey Dinner, Fun

The Management Club's annual Father, Son and Daughter turkey dinner will be held Saturday, November 9, according to A. H. Kendall, president. "This will be one of the biggest affairs ever," he reports.

Scene will be the NRC Clubhouse with program due to start at 4 p.m., dinner at 5 p.m. and the entertainment following. Dell O'Dell, woman magician from station KTLA, and clown Charlie "Oh Boy" Carter will perform. A guest speaker from the Northrop Flight Test Department will show movies to the gathering. Rounding out the program will be games and favors for the attendants.

Tickets, \$2.75 for adults and \$1.50 for children 12 years and under, are available from Management Club members.

## Report—

(Continued from page 1)

out the challenging period ahead and said, "We can expect that all of our programs will be under continuous review by our customers and that only by high quality and on-schedule accomplishments under lowest possible costs can we continue to be successful."

## More Management Club



**DOOR PRIZE TIME**—Management Club Board of Control men get set to award gifts to lucky members. Note luggage, radio, mixer. From left, Howard Childers, Jerry Middleton, Al Rathbun, and Murray Colwell. Event was season highlight, annual Management Club dinner-dance.

TRY

## Going My Way

SHARE THE RIDE  
TO NORTHROP

lines of the supersonic airplane offer so little wind resistance that such airplanes have been known to roll more than seven miles during "no brake" tests conducted on the dry lake bed at Edwards Air Force Base, California.

The many facets of this deceleration problem will be the subject of the 31st USAF-Aircraft Industry Flying Safety Conference to be held at El Mirador Hotel, Palm Springs, November 19-21, according to Maj. General Joseph D. "Smokey" Caldara, Director of USAF Flight Safety Research (FSR), which sponsors the conference.

The meetings are informal, permitting an enthusiastic exchange of safety ideas.

General Caldara will open the conference by telling of the 1957 aircraft accident picture, and the impact that it has on the combat capability of the Air Force. He also will tell the conferees that the major accident rate now is at an all-time low of 14 accidents per 100,000 flying hours.

The conferees will then hear

## AES NOMINATES LORNE BRISTOL FOR EXEC POST

Norcraft Lorne Bristol, senior engineer of Missile Field Test, was nominated to serve on the executive committee of the Aircraft Electrical Society for the 1957-58 year. He and nine other leading electrical specialists were nominated.

Election by mail ballot is underway and results will be announced at the Society's November meeting. The AES was organized in 1941 to promote understanding and cooperation between designers and manufacturers of new equipment and those who operate the equipment in the field.

technical presentations, delivered by design engineers from industry, on: "Wheels, Brakes and Anti-Skid Devices"; "Aircraft Tires"; "Aircraft Drag Chutes"; "Design and Application of Thrust Reversers for Ground and Flight Operations" and "Aircraft Arresting Systems".

## Norcrafters "Ear-witness" Successful Fire Alarm Test

The fire alarm and Disaster Planning call system, recently installed throughout Northrop Field plants, is now complete and has satisfactorily passed all tests, it has been announced.

All Norcrafters were "ear-witnesses" to the two-hour long shakedown last Friday, after which the Company approved the installation.

Installed by the Pacific Telephone and Telegraph Company, the system consists of 50 amplifiers, 850 speakers, 200,000 feet of wire. Three microphones gov-

ern the system. The Fire Service Department has first command and Protection Service, through their Disaster Planning Service, has second command.

Both agencies are conducting briefing classes to acquaint auxiliary and volunteer personnel with new communications codes.

The old fire horns and bells have been discontinued. Fire zones have also been changed to coincide with plant area call-outs.

System design, engineered by the telephone company, is one of the most modern in industry.

## Training at Northrop—

(Continued from page 1)

During a one year assignment in industry, the officers function as employees, performing productive work. Aim is to give the military an increased understanding of latest operations in the aircraft industry.

Following an orientation period with the Northrop Publications and Training Department, the three officers received their first assignments as Norcrafters. Captain Galvin is with the Manufacturing Program Planning Department working with Mike Creamer. Captain Launderville is with Wally Reese in the Weapons Analysis Group of the SM-62 Project Office. And, Captain Johnston is in the Guidance Performance Test section with Dan Dennis.

Each will spend a three-month period on their present jobs and then alternate until each has served in engineering, production, and research and development assignments.

How important this "Training With Industry" program is to the Air Force is illustrated by the careful selection of officers who participate. Each must meet high educational standards and possess executive abilities. Following completion of the year-long program the officers are assigned duties which will make use of their industrial experiences.

The officers said their experience is giving them a greater awareness of industrial operations, the problems to be overcome, and the procedures to be used. Voicing the impression of the three, Captain Galvin said, "This sort of experience will help improve understanding and cooperation between the Air Force and contractor. We must know each other's problems and methods in order to get the job done."

The three career officers at Northrop are all engineering grads; Galvin—from the University of New Hampshire, Launderville from Clarkson College of Technology, and Johnston from

## Present Safety Factor Lags Mangurian Tells NATO Meet

A leading Northrop engineer told NATO aeronautical experts meeting in Paris, France, this week that safety standards in the design of aircraft must keep pace with advances in structural and aerodynamic technology.

George N. Mangurian, Northrop's chief analytical engineer, speaking before the Advisory Group for Aeronautical Research

and Development of NATO, pointed to the need. "If we are to economically design, build and operate aircraft of the future while retaining adequate safety, change must be made in the present factor of safety concept."

He said the present factor of safety was first established in 1934 and took into account materials in use at that time, possibility of design irregularities, defects in material and workmanship, performance exceeding specifications, and other allowances. Since that time, however, considerable advances have been made including use of new materials, improved fabrication techniques, and more extensive testing.

While certain allowances are still necessary, present technology suggests a more realistic approach to some design aspects, he stated.

One of the points used to illustrate his premise was the increased performance characteristics of today's aircraft and those of the future. He said automatic controls will no doubt be required to keep performance within specified safety limits.

He explained that high speed military aircraft of the future will be controlled primarily by navigational and fire control systems rather than by pilots. Further, commercial air transports in the jet age may have to rely almost entirely on automatic navigation in order to obtain the necessary safety.

Increasing costs of aircraft and missiles and reduced national budgets are motivation for changes, Mr. Mangurian said. "The challenge is open to all. A rational and realistic design philosophy approach must be taken in the future. Only by this means will the aircraft industry be able to produce the safest aircraft at the least cost."

Mr. Mangurian was invited to present his paper at the Paris meeting by Dr. Theodore von Kármán and Dr. Hugh L. Dryden, the United States National delegates at AGARD. Dr. von Kármán was a long-time consultant to Northrop Aircraft during World War II.

## Security Reorganization—

(Continued from page 1)

chures and proposals also must be handled carefully to make sure that security is not violated."

Mr. Crews also asked the Northrop News to specifically point out the following security factors that should be observed by all:

Security is a personal responsibility.

Each individual Norcrafter charged with classified material is personally responsible for that material.

Security responsibility cannot

be passed on to anyone else—illustration: don't leave classified files unlocked; don't leave classified documents unattended on desks.

If you have to pass on classified material to another person, make sure that he has clearance equal to or above that of the document; also be sure of his need to know.

Decision to release classified material to another can only be made by the person holding the material.

## Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 4

A NORTHROP AIRCRAFT INC. PUBLICATION  
Published every other Wednesday  
PUBLIC RELATIONS, NORTHROP DIVISION  
CHARLES BARR, Manager

CHARLES BRADFORD, Editor

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**RIDES WANTED**

7:00 a.m. — 3:45 p.m.

(Zone 1)  
CENTURY & CRENSHAW, Inglewood.  
ISABEL DOTY (5355-53694, Ext. 1575),  
OR 7-4995. 2-1

(Zone 5)  
CITRON & LA PALMA, Anaheim. (Car  
pool considered.) W. A. RUSSELL (3410-  
46163, Ext. 2591). 2-5  
ROSECRANS & BELLFLOWER, Downey.  
ART FINKEN (5568-50807, Ext. 2745),  
TO 1-7675. 2-5

(Zone 6)  
VICTORIA & AVALON BLVD., Gardena.  
L. R. MONSON (5512-54663, Ext. 2568),  
DA 9-6897. 2-6

(Zone 8)  
GAFFEY & 18TH STREET, San Pedro.  
(Near High School.) JUNE TAYLOR (5143-  
48583, Ext. 663), TE 2-4137. 2-8

(Zone 11)  
IMPERIAL & SEPULVEDA, El Segundo.  
LESTER L. WINCHELL (5234-53707, Ext.  
2466), EA 2-1885. 2-11

7:30 a.m. — 4:15 p.m.

(Zone 1)  
CRENSHAW & 67TH ST., Los Angeles.  
JOHN DI GIOIA (9542-54342, Ext.  
2229), PL 3-9010. 3-1

(Zone 4)  
TELEGRAPH ROAD & IMPERIAL, Whittier.  
(Car pool considered.) G. J. MARINELLO  
(5980-35825, Ext. 2600), OX 3-7384. 3-4  
NORMANDIE & IMPERIAL, Los Angeles.  
LA BELLE CESERI (1421-45815, Ext. 2393),  
PL 6-2593. 3-4

(Zone 5)  
ORANGETHORPE & BROOKHURST, Ful-  
lerton. (Car pool desired.) DAVID KESS-  
LER (7630-53712, Ext. 2124), LA 5-4555.  
WOODRUFF & HARCO, Long Beach.  
GLADYS L. NESLAND (4200-13586, Ext.  
2586), HA 9-7277. 3-5

LA PALMA & MILLER, Buena Park. (Car  
pool desired.) B. E. LOVERIN (8920-  
32252, Ext. 1518), JA 7-4378. 3-5

ORANGETHORPE & WESTERN, Buena  
Park. (Car pool considered.) RAY THORN-  
BERG (5940-37287, Ext. 2661), LA 2-5203.

(Zone 6)  
ARTESIA & AVALON, Gardena. W. R.  
ARMISTEAD (7513-51854, Ext. 2408). 3-6

WILLOW & PALO VERDE, Long Beach.  
(Car pool desired.) JOHN R. SNYDER  
(8910-29465, Ext. 694), HA 9-3768. 3-6

CONANT & PALO VERDE, Long Beach.  
(Car pool desired.) KARLA DIXON (9542-  
51034, Ext. 2228), HA 9-7732. 3-6

STUDEBAKER & STEARNS, Long Beach.  
(Car pool desired.) JOHN G. SOLTES  
(1810-43935, Ext. 2675), GE 1-0313. 3-6

(Zone 7)  
DAPHNE AVE. & 147TH ST., Gardena.  
S. J. DOWNEY (7020-29176, Ext. 788),  
DA 9-2732. 3-7

(Zone 8)  
PALOS VERDES & SEPULVEDA, Torrance.  
ELIZABETH RODINA (4200-53774, Ext.  
643), FR 5-9337. 3-8  
PALOS VERDES DR. EAST & EASTFIELD  
DR., Rolling Hills. (Car pool considered.)  
JOHN G. McCUE (3410-31500, Ext. 556),  
FR 7-1184. 3-8

(Zone 9)  
HAWTHORNE BLVD. & 169TH ST., Law-  
dale. JUNE WOLFE (USAF, Ext. 756). 3-9

(Zone 10)  
PACIFIC COAST HIGHWAY & AVE. C,  
Redondo Beach. MARY SHADRICK (1421-  
53149, Ext. 2393), FR 8-1170. 3-10

ANZA & 190TH ST., Redondo Beach.  
VERA RIDEOUT (8920-27694, Ext. 1564).

(Zone 11)  
SHELDON & GRAND, El Segundo.  
(Car pool desired.) W. E. DUVAL  
(5910-45536, Ext. 2614), EA 2-4306.

(Zone 12)  
ROSE AVE. & LINCOLN, Venice. (Car  
pool considered.) HAROLD H. PETTI-  
BONE (5980-53516, Ext. 2600), EX  
9-2530. 3-12

(Zone 13)  
VAN NUYS & VENTURA, Van Nuys.  
DAVID SILVER (USAF, Ext. 1652), ST  
9-2534. 3-13

WESTWOOD & PICO, West Los Angeles.  
(Car pool considered.) ARTHUR J. HAN-  
SEL (9514-54781, Ext. 2151), GR 8-5180.

SEPULVEDA & CULVER BLVD., Culver  
City. E. D. PEDEN (8930-15664, Ext.  
2773). 3-13

TOPANGA CANYON BLVD. & VENTURA,  
Canoga Park. (Car pool desired.)  
WILLIAM R. FAUGHT (8930-32246, Ext.  
2718), DI 0-2716. 3-13

(Zone 14)  
LA CIENEGA & VENICE BLVD., Los  
Angeles. J. A. SPECTER (5238-52241,  
Ext. 1766), VE 9-0788. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA & WESTERN, Los  
Angeles. H. GREER (3312-53657, Ext.  
2775), HO 4-6094. 5-1

**MANAGEMENT CLUB**

annual dinner dance—Scene  
—Bali Room at the Beverly-  
Hilton. Dancing was to the  
music of Leighton Noble's  
orchestra. Mr. and Mrs.  
Whitley C. Collins at right.  
Mr. and Mrs. Lee Smith,  
center, Mr. and Mrs. Dan  
Hill, left; Mr. and Mrs. Jack  
Young, Mr. and Mrs. E. D.  
Kinsey, and many, many  
others. Date—October 19.

**RIDES WANTED**

8:00 a.m. — 4:45 p.m.

(Zone 3)  
NORMANDIE & 103RD ST., Los Angeles.  
HAZEL M. HEWITT (1422-10880, Ext.  
688), PL 6-3590. 5-3

(Zone 4)  
PARAMOUNT BLVD. & IMPERIAL, Holly-  
dale. (Car pool considered.) ED PAR-  
KISON (3316-12916, Ext. 2554), ME  
3-5922. 5-4

(Zone 6)  
VERMONT & 154TH ST., Gardena. (Wish  
ride home evenings.) CLARA PERRY  
(3148-46182, Ext. 746), DA 3-5119. 5-6

(Zone 7)  
CARSON & MAIN, Torrance. (Car pool  
desired.) N. K. YOUNG (3544-44811,  
Ext. 2471), TE 4-6920. 5-7

(Zone 12)  
SUNSET BLVD. & VIA DE LA PAZ, Pacific  
Palisades. (Car pool desired.) D. H.  
WEEKS (3811-29901, Ext. 539), GL  
4-4866. 5-12

(Zone 14)  
OLYMPIC & FAIRFAX, Los Angeles. (Want  
members for established car pool.)  
HAROLD L. FISHER (3542-50302, Ext.  
719), WE 8-8325. 5-14

MELROSE & LA BREA, L. A. L. D.  
ABRAMS (3532-31181, Ext. 2701), WE  
1-8478. 5-14

3:45 p.m. — 12:15 a.m.

(Zone 1)  
VERMONT & ADAMS, Los Angeles. (Car  
pool considered.) ROBERT L. PEARSON  
(5587-54122, Ext. 1381). 6-1

(Zone 10)  
MANHATTAN BEACH & RINDGE LANE,  
Redondo Beach. DOROTHY MIDDLETON  
(5351-51201, Ext. 1706), FR 6-2300. 6-10

4:45 p.m. — 1:15 a.m.

(Zone 1)  
WESTERN AVE. & 3RD ST., Los Angeles.  
CHRIS BOYKIN (5374-16720, Ext. 2765),  
DU 4-4289. 8-1

(Zone 12)  
PICO & 25TH ST., Santa Monica. MAR-  
JORIE KETCHERSID (5352-48763, Ext.  
1607), EX 9-5336. 8-12

**Miscellaneous — Split Shift**

(Zone 3)  
MOUNTAIN AVE. & SAN BERNARDINO  
FWY., Upland. (Car pool desired; via  
San Bernardino freeway. Hours: 4:15  
p.m.-12:45 a.m.) ARNOLD ZAVITZ (5920-  
51830, Ext. 1725), YU 2-4296. 10-3

**RIDES OFFERED**

7:00 a.m. — 3:45 p.m.

(Zone 1)  
CRENSHAW & 60TH ST., Los Angeles.  
(Have room for 5 passengers.) G. O.  
AKLAND (7734-10766, Ext. 2362), PL  
2-5217. 12-1

(Zone 5)  
CITRON & LA PALMA, Anaheim. (Car  
pool considered.) W. A. RUSSELL (3410-  
46163, Ext. 2591). 12-5  
BROOKHURST & CHAPMAN, Garden  
Grove. WILLIS K. LAMME (5437-45518,  
Ext. 2020), LE 9-9425. 12-5

(Zone 8)  
CRENSHAW & 190TH ST., Torrance.  
FRANK CLARKE (5512-54524, Ext. 2568),  
DA 4-5640. 12-8

7:30 a.m. — 4:15 p.m.

(Zone 3)  
VAN NESS or WILTON & IMPERIAL,  
L.A. D. H. DAVIS (8941-15892, Ext. 667),  
PL 6-0015. 13-3

(Zone 4)  
TELEGRAPH ROAD & IMPERIAL, Whittier.  
(Car pool considered.) G. J. MARINELLO  
(5980-35825, Ext. 2600), OX 3-7384. 13-4

(Zone 5)  
ORANGETHORPE & BROOKHURST, Ful-  
lerton. (Car pool desired.) DAVID KESS-  
LER (7630-53712, Ext. 2124), LA 5-4555.  
13-5

LA PALMA & MILLER, Buena Park. (Car  
pool desired.) B. E. LOVERIN (8920-  
32252, Ext. 1518), JA 7-4378. 13-5

# Management Club---Dines, Dances



**MANAGEMENT CLUB** dining at the Bev-  
erly-Hilton—. Around the table clock-  
wise from 11 o'clock are: Mr. Whitley C. Col-  
lins, Mrs. Tom Beresford, Mr. E. F. Paul,  
Mrs. Dave Bean, Mr. A. H. Kendall, Man-  
agement Club president, Mrs. Whitley C.  
Collins, Mr. Dave Bean, Mrs. E. F. Paul,  
Mr. Tom Beresford, and Mrs. A. H. Ken-  
dall. Gala Bali Room provided setting.



**FROM ENGINEERING**—. Around the table  
clockwise starting at 7 o'clock are: Mr.  
Roy Jackson, Mrs. Welko Gasich, Mr.  
George Douglas, Mrs. Milt Kuska, Mr.  
Verl O. Smith, Mrs. Roy Jackson, Mr. Milt  
Kuska, Mr. R. M. Warner (standing), Mrs.  
Verl O. Smith, Mr. Welko Gasich, and  
Mrs. George Douglas. The event was  
voted highly successful by one and all.



**AT THIS TABLE**—. Around the table clock-  
wise starting at 9 o'clock are: Mr. and  
Mrs. George Forbes, Mr. and Mrs. James  
Morris, Mr. and Mrs. L. H. Poynter, Mr.  
and Mrs. Harold F. Timmerman, Mr. and  
Mrs. Ted Belitz. Decorations—Indonesian.



**AT THIS TABLE**—. Clockwise starting at  
12—Mr. and Mrs. Thomas Quayle, Mr.  
and Mrs. Jack Mannion, Colonel and Mrs.  
D. A. Simcoe, Mr. Robert R. Miller, and  
Dr. and Mrs. William Ballhaus. Capacity  
throng attended. Faces reflect enjoyment.

**RIDES OFFERED**

7:30 a.m. — 4:15 p.m.

(Zone 5)  
ORANGETHORPE & WESTERN, Buena  
Park. (Car pool considered.) RAY THORN-  
BERG (5940-37287, Ext. 2661), LA 2-5203.  
13-5

(Zone 6)  
STUDEBAKER & STEARNS, Long Beach.  
(Car pool desired.) JOHN G. SOLTES  
(1810-43935, Ext. 2675), GE 1-0313.

WILLOW & PALO VERDE, Long Beach.  
(Car pool desired.) JOHN R. SNYDER  
(8910-29465, Ext. 694), HA 9-3768. 13-6

101 HWY. IN LAGUNA, Laguna Beach.  
(Would like 1 rider.) W. P. COLLUP  
(1800-51116, Ext. 774). 13-6

CONANT & PALO VERDE, Long Beach.  
(Car pool desired.) KARLA DIXON (9542-  
51034, Ext. 2228), HA 9-7732. 13-6

(Zone 8)  
PALOS VERDES DR. EAST & EASTFIELD  
DR., Rolling Hills. (Car pool considered.)  
JOHN G. McCUE (3410-31500, Ext. 556),  
FR 7-1184. 13-8

(Zone 10)  
INGLEWOOD AVE & 140TH ST., Haw-  
thorne. R. S. McDONALD (5980-24305,  
Ext. 2600). OS 5-8338. 13-10

VALLEY DR. & PIER, Hermosa. CALLI  
MONIZ (5143-43550, Ext. 663), FR  
4-9498. 13-10

(Zone 11)  
SHELDON & GRAND, El Segundo.  
(Car pool desired.) W. E. DUVAL  
(5910-45536, Ext. 2614), EA 2-4306.

(Zone 12)  
ROSE AVE. & LINCOLN, Venice. (Car  
pool considered.) HAROLD H. PETTI-  
BONE (5980-53516, Ext. 2600). EX  
9-2530. 12-12

**RIDES OFFERED**

7:30 a.m. — 4:15 p.m.

(Zone 13)  
WESTWOOD & PICO, West Los Angeles.  
(Car pool considered.) ARTHUR J. HAN-  
SEL (9514-54781, Ext. 2151), GR 8-5180.  
13-13

TOPANGA CANYON BLVD. & VENTURA,  
Canoga Park. (Car pool desired.)  
WILLIAM R. FAUGHT (8930-32246, Ext.  
2718), DI 0-2716. 13-13

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA & WESTERN, Los  
Angeles. H. GREER (3312-53657, Ext.  
2775), HO 4-6094. 15-1

(Zone 3)  
HOOVER & CENTURY, L.A. W. W.  
WEBSTER (3812-12638, Ext. 581), PL  
6-0536. 15-3

(Zone 4)  
PARAMOUNT BLVD. & IMPERIAL, Holly-  
dale. (Car pool considered.) ED PAR-  
KISON (3316-12916, Ext. 2554), ME  
3-5922. 15-4

(Zone 7)  
CARSON & MAIN, Torrance. (Car pool  
desired.) N. K. YOUNG (3544-44811,  
Ext. 2471), TE 4-6920. 15-7

(Zone 12)  
SUNSET BLVD. & VIA DE LA PAZ, Pacific  
Palisades. (Car pool desired.) D. H.  
WEEKS (3811-29901, Ext. 539), GL  
4-4866. 15-12

(Zone 14)  
OLYMPIC & FAIRFAX, Los Angeles. (Want  
members for established car pool.)  
HAROLD L. FISHER (3542-50302, Ext.  
719), WE 8-8325. 15-14

**RIDES OFFERED**

3:45 p.m. — 12:15 a.m.

(Zone 1)  
VERMONT & ADAMS, Los Angeles. (Car  
pool considered.) ROBERT L. PEARSON  
(5587-54122, Ext. 1381). 16-1

(Zone 3)  
POMONA AREA. R. J. KAMINSKI (5550-  
34092, Ext. 2770), TR 5-5687. 16-3

4:45 p.m. — 1:15 a.m.

(Zone 5)  
NEW HOPE & HAZARD, Garden Grove.  
(Have room for 3.) ARTHUR L. BURTON  
(5240-45341, Ext. 2530), JE 1-2414. 18-5

(Zone 6)  
REDONDO AVE. & 10TH ST., Long  
Beach. (Want 2 riders to new Ena.  
Bldg.) EVELYN NICKESON (3141-53256,  
Ext. 403). 18-6

**Miscellaneous — Split Shift**

(Zone 1)  
FOOTHILL BLVD. & RAMSDELL, La Cres-  
centa. (Hours: 7:30 a.m. - 4:45 p.m.)  
M. L. DUNBAR (5515-31869, Ext. 2175),  
CH 9-6305. 20-1

MOUNTAIN AVE. & SAN BERNARDINO  
FWY., Upland. (Car pool desired; via  
San Bernardino freeway. Hours: 4:15  
p.m.-12:45 a.m.) ARNOLD ZAVITZ (5920-  
51830, Ext. 1725), YU 2-4296. 20-3

**Share  
the Ride**



# BBSF Classified Ads

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Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

HUB CAPS, 2, Dodge Royal Lancer, \$15. FR 7-1184. A  
REFRIGERATOR, 6' Coolerator, cross top freezer, \$90. GA 4-7402. A  
DOGHOUSE, large, hinged flat shingled roof, windows, rubber flap door, watertight. \$25; Square D Wiggy VOLTAGE TESTER, DC polarity indicator, \$14. DA 9-2355. A  
SPEEDBOAT, 18' Chris-Craft, alased, new inboard engine, Pargon transmission. DA 3-2456. A  
CONTOUR CHAIR, \$40. FR 8-2609. A  
RADIO, GE transistor, \$20; Whittnauer automatic WRISTWATCH, \$10. Box 411. A  
BORGWARD, 1956, sunroof, \$2000. LO 4-4832. A  
MISCELLANEOUS, 3 Bauer electric wall heaters; RCA portable radio-phonograph, 198 power line adapter; Boy Scout unif., 16 shirt, cap, pants. HA 9-3768. A  
RACE CAR, quarter midget, new engine, tires, extra equipment. \$425. EA 2-2413. A  
MORRIS OXFORD, 1951, 4-door, 4 cyl., needs work. \$150. NE 2-5241. A  
POWER MOWER, 17 1/2" in. cut, 4 cycle Clinton engine. \$50. TE 4-4993. A  
GEIGER COUNTER, 2500 nuclear model, \$100. Box 408. A  
TRANSPORTATION CAR, \$75. Box 409. A  
THUNDERBIRD, 1956, Ford O-Matic, hardtop, tonneau cover, \$2995. GE 1-1564. A  
JAGUAR, 1953 XK120M coupe. FR 2-9963. A  
MERCURY, 1951 2-door. AX 2-3172. A  
REVOLVER, S&W .38 cal. model M&P, \$45. OR 4-4936. A  
MISCELLANEOUS, GE refrigerator, Hoover upright vacuum, May Co. wringer washer. OS 6-5033. A  
UNIFORMS, Girl Scout, size 10, 12 & 14. FR 9-2140. A  
FORD, 1940, \$100. OR 4-9891. A  
TRIUMPH, 1956, \$1995. PL 4-7158. A  
UTILITY TRAILER, custom built 2-wheel, 4'x7'x4'. removable top, hitch, tail/stop lite plug-in. \$75. OR 2-0352. A  
HOUSE, 3-bedroom, family room, 2 baths, La Habra Hills Estates, furnished, drapes, carpet, fireplace, patio, intercom, double & half garage, dishwasher, washer/dryer, disposal, \$32,000, \$7000 down. Box 407. A  
MISCELLANEOUS, 6 1/2' ski, \$12; ski shoe, size 8, \$6; bamboo pole, \$1.50; office arm chair, \$18; .38 S&W revolver, holster, \$40. OS 6-3222. A  
CAMERA, Arqus C-4, 35mm, flash, extras, \$55; Arqus 300 watt projector, auto, \$45; Metraphot exposure meter, indoor attachments. \$12; all \$100. DA 4-8845. A  
BUICK, 1953 Special 2-door, \$795. OR 4-6552. A  
MISCELLANEOUS, 1955 Gaffers & Sattler auto gas range, \$150; boy's Schwinn 26" bike, needs seat & tire, \$20; hardwood frame bunk beds, & box springs, \$30; 12' paddle board, \$22. FR 8-1735. A  
TONNEAU COVER, fits 1955-1956 Ford convertible. GR 7-1937. A  
FURNITURE, dinette set, chairs, 21" table model TV. PL 5-6798. A  
CAMERA, 8mm movie, Bell & Howell Companion, case, \$45. RE 2-9259. A  
CAMERA, Zeiss-Ikon, Contax 2-A, Sonnar 1.2 lens, 35mm, flash, \$275; telephoto LENS, Nikkor 1:3.5, 135mm, viewfinder, \$160; Zeiss Ikon Ikonophor LIGHT-METER, \$15; German Royal Furstenberg CHINA, service for 8, \$150. OR 7-6524. A  
CASTING REEL, fresh water Pfeuffer Supreme, \$17. PL 2-6947. A  
THUNDERBIRD, 1957, hardtop, overdrive, transistor radio, tonneau cover, extras. WE 1-7895. A  
BOAT, 12', 5 h.p. motor, trailer, \$200; 2 5.25/50-18 TIRES & wheels, mounted, \$12; 1951 Ford left hand CROSSOVER, \$1; cluster GEAR, \$5. FR 9-6837. A  
MOTORCYCLE, 1951 Indian 40" vertical twin, \$275. DA 3-1387. A  
TV CHANNEL CHANGER, changes channels from chair, \$22. DA 4-8377. A  
GAS RANGE, 40" Tappan, \$130; baby CRIB, \$15; MATTRESS, \$5. FR 4-2505. A  
SHOTGUN, Browning 20 ga., automatic, holster, never fired, \$85. Box 413. A  
DESK, kneehole 6-drawer, walnut, \$25. FR 9-6048. A  
BOAT EQUIPMENT, miscellaneous, Monel shaft, rudder, bow lite, standard prop, Mae West jackets; SPEED BOAT, 26', 200 h.p. FA 1-0020. A  
MERCURY, 1954 2-door, overdrive. OR 2-8004. A  
FORD, 1956 Fairlane V8, Ford-O-Matic, equity, take over payments; DINING SET, buffet. OR 4-9321. A  
DIVAN, \$25. FR 5-7810. A  
HUDSON, 1948 4-door sedan, \$85; WASHER, 1953 G.E. automatic, \$50. FR 6-2267. A

## FOR SALE

DOUBLE BED, head & foot boards, box springs, mattress, 10'x12' blue RUG, \$15. HO 5-1380. A  
BOAT, 16 1/2', 7' beam, Glenwood design, \$350. OS 5-0169. A  
CONTINENTAL MOTOR, double overhead cam, 3" bore, 3 1/2" stroke, 96 cu. in., extra crankshaft, rods, pistons, complete, \$500. FR 2-0026, 10 a.m. - 3 p.m. A  
HOUSE, 2-bedroom, carpet, fireplace, fenced, \$12,900, 4 1/2% OS 5-8943. A  
MISCELLANEOUS, child's vacuum cleaner, \$13; Sunbeam electric shaver, \$10; GE intake-exhaust fans, \$50; lawn sprinkler system, above ground, \$50. DA 4-3912. A  
RADIO, Hallicrafter 8 band world wide portable, hear Sputnik, \$70. OR 2-4206. A  
REFRIGERATOR, 1955 Servel gas, 11 cu. ft., automatic, \$225. FR 9-2206. A  
BEDROOM SET, vanity, dresser, double bed, spring, mattress, \$45. OS 5-8300. A  
PUPPIES, Toy Fox Terriers; Chihuahuas, grown or pups. DA 9-3936. A  
DODGE, 1949 2-door sedan, \$160. DA 3-0979. A  
MISCELLANEOUS, maple play pen, plastic teething rails, new plastic pad, \$5; Kantwet tartan plaid baby car-bed, \$5; teeterbabe, plastic tray, \$5; imported boucle wool suit or dress yarn, 20 skeins each blue, red, \$15. NE 5-4370. A  
MISCELLANEOUS, rubber stamp-making outfit, materials, vulcanizing press; microdynamic microphone, stand, cable, never used. FA 8-1848. A  
PLAYER PIANO, honkey-tonk attachment, bench, rolls, 52" high, \$195. OR 7-8768. A  
NASH, 1951 Statesman 2-door sedan, overdrive, \$195. FR 5-4642. A  
OLDSMOBILE, 1946 2-door, \$65. OR 2-3512. A  
FORD, 1951 4-door sedan, overdrive, \$395. DA 3-0134. A  
KODAK, Retina III C, F2 Xenon lens, built-in rangefinder, exposure meter, case, F3.5 wide angle lens, viewfinder, case, never used, \$150. AX 2-7118. A  
PAINT SPRAYER, Craftsman, 1/3 h.p., hose, gun, nozzles, \$30; AIR RIFLE, 22 cal., \$20. OS 6-6390. A  
CHEVROLET, 1947 2-door sedan, new battery, \$100. VE 8-1244. A  
MISCELLANEOUS, 2 MGTD headlights, \$2; aircraft carbon microphone, \$3; headset, \$3; "O" gaug roadbed, Atlas fishplate, \$5; model railroad kits, HO assorted, \$30; HO Atlantic, \$10; switcher, \$2; dockside, \$1; champ decal dealers assortment, \$5, all \$45. Box 406. A  
MIRROR, door or wall, full length, will install, \$22.50. FR 2-0126. A  
RUG & PAD, 9'x15', \$30. Box 405. A  
DODGE, 1952 4-door sedan, recently overhauled, \$450. Box 404. A  
PLAY PEN, used little, \$13. Box 403. A  
FORD, 1952, \$450. Box 401. A  
PLYMOUTH, 1947, \$75. DA 4-5532. A  
TRAILER, 10' teardrop, walk-in kitchen; 18' cabin CRUISER, trailer, \$795; 1950 Cadillac coupe, \$795. FR 8-2590. A  
HOUSE, near Northrop, 2-bedroom, 2-car garage, fenced, disposal, \$2500 down, \$75 mo., \$12,500. DA 3-6924. A  
RINGS, engagement ring, 9 diamonds, wedding ring, 12 diamonds, 14 carat yellow gold, \$100. FR 2-9504. A  
VOLKSWAGEN, 1957, \$1625. NO 2-4403. A  
NASH, 1949 4-door sedan, overdrive, \$65. RE 4-2328. A  
DESK, roll top, large, \$25; Schwinn side-walk BIKE, \$20. FR 5-4763. A  
BABY FURNITURE, play pen, \$8; high chair, \$4; potty chair, \$1; carriage, \$5; car-bed-seat, \$2.50. WE 6-6709. A  
FORD, 1939 coupe, Merc V8 1946 engine, new brakes, carb, fuel & water pump, \$100. NO 2-5388. A  
TV, 17", modern, \$40. DU 7-4011. A  
BOXER PUPPIES, champion sired, AKC, brindles and fawns, have had shots, 2 months old. PL 5-2828. A  
MISCELLANEOUS, banjo, ukulele, mandolin, typewriter, electric broiler, gas heater, violin. OS 6-6449. A  
OLDSMOBILE, 1955 2-door hardtop. VE 8-6095. A  
FORD, 1954 Customline, undercoat. FR 4-4159. A  
DEPTH MICROMETER, Craftsman, \$10; Slocumb 2" MICROMETER, \$7. FR 4-0527. A  
BED-DIVAN, modern, newly upholstered, \$90; DOG, female Belgian Shepherd, has all shots, \$5. FR 2-8067. A  
CHEVROLET, 1952 deluxe, Powerglide, new tubeless tires, seat covers, settling estate, \$495. OL 6-4152. A  
ROLLER SKATES, men's high top shoe, size 12, semi-precision wheels, \$30. OS 6-5218. A  
SAXOPHONE, alto, case, \$50; ceramic KILN, greenware, molds, \$100; prospector's wet wash SLUICE BOX, shaker type, \$25. OS 5-6587. A

## FOR SALE

TRAILER, 1954 Bel-Air Skyliner, 15' sportsman, \$700. OR 2-2093. A  
FURNITURE, baby bed, jr. bedroom set, hide-a-bed, lounge chair, Gaffers & Sattler stove, Philco 12 cu. ft. 2-door refrigerator, kitchen set, playpen, hi-chair. FR 9-1527. A  
HORSE TRAILER, 1-horse, \$175; Marvel walk-in 12' camp TRAILER, \$275. FR 4-8572. A  
MERCURY, 1955 Monterey hardtop, Merc-O-Matic, \$1800, or \$900 and finance balance. FR 8-1488. A  
PLYMOUTH, 1951 2-door sedan, needs body work, \$200; RADIO, for 6-volt auto, custom fit for 1951-52 Plymouth, push button, \$35. FR 6-1251. A  
MOTORCYCLE, 1956 AJS twin, accessories. OS 6-6108. A  
FORD, 1932 5-window coupe, chopped, channeled, full fendered, 3/4x3/4 1949 Mercury engine, \$350; 1955 Triumph MOTORCYCLE, \$550. DA 4-8189. A  
MISCELLANEOUS, 7-pc. dining set, \$45; 1951 Studebaker, auto, transmission, \$300; 16" TV, blonde teletone console, \$50; 12 1/2" TV, mahogany table model, \$35; 1949 Plymouth, needs fender and grill, \$125. FR 9-8108. A  
DINETTE SET, chrome, 4 chairs, opens to 60", \$25; apt. size aas RANGE, Bendix Dial-A-Matic WASHER, both \$35. FR 9-0926. A  
FURNITURE, mahogany secretary, \$100; mahogany serving cart, \$20; gray platform rocker, \$45. GE 1-3731. A  
HAMSTERS, 2, 8 cu. ft. cage, smaller cage; Boxer PUPPY, female, 4 mos., papers. FR 5-3301. A  
STOVE, O'Keefe & Merritt, clock timer, grill, \$50; mahogany coffee TABLE, glass top, \$10; double BED, western pine, panels. \$8. AX 5-2375. A  
DINING SET, 8-pc. lined oak, \$75; Hamilton Beach model E MIXER, \$10. TE 2-0578. A  
DINING TABLE, old-fashioned hardwood, 42"x42", leaves, 4 chairs, \$10; Thor GLADIRON small manale, \$5. PL 8-7138. A  
PRESSURE COOKER, Miracle Maid, \$30. FA 8-5958. A  
FORD, 1951 pickup, 3-speed transmission, \$450. DA 6-7337. A  
BUICK, 1950 Special 4-door, Dynaflo, body work needed, take over payments, \$135 balance. DI 7-3884. A  
HOUSE, custom, modern redwood, 3-bedroom, family room, 1 1/2 baths, drapes, disposal, water softener, copper plumbing, 2-car garage, quest room attached, fenced, S. Redondo, \$17,850, cash or terms. FR 4-7155. A  
FORD, 1949 V-8 4-door, \$175; FORD, 1951 V-8 4-door custom, overdrive, \$400. FR 5-3914. A  
HOUSE, 3-bedroom, fenced, N. Wilmington, \$8650, \$650 down. TE 4-2480. A  
HI-FI, Magnavox AM-FM 3-speed auto, record changer, mahogany cabinet, \$125. PL 6-0893. A  
MISCELLANEOUS, Johnson 4 1/2 hp. outboard motor, \$20; Webcor aut. record changer, 78 rpm., \$5; RCA 3-speed plug-in record player, \$5; Federal Store-A-Way enlarger, case, for 35 mm. to 2 1/4x3 1/4 negatives, \$20; 3 - 8x10 developing trays, \$2; Airequip Dial-master easel, \$5; Edmunds dual manifold for 1937-1952 Buick series 40 & 50, \$25; Carter carburetor for Edmunds manifold, \$10; chrome air cleaner, 2 1/2" throat, \$3. EX 7-9900. A  
CHEVROLET, 1953 4-door. FR 7-1745. A  
DRAFTING MACHINE, Bruning, used 1 year, plastic scale, \$60. FA 8-7724. A  
MOTORCYCLE, 1957 Zundapp, 200 cc., class C racing tires, \$375. TO 7-9504. A  
KITCHEN RANGE, Pan American, \$40. OS 6-8895. A  
BAR, half hexagon shaped, birds-eye maple. OS 6-8743. A  
SKATES, 3 pr. boy's roller derby, sizes 4 and 7. DA 9-5411. A  
SLIDE RULE, Pickett, model 500T, log scale, never used, \$10. DA 9-5579. A  
MISCELLANEOUS, Hoffman 17" console TV, \$45; Philco 10" table TV, \$25, both sets just overhauled; 1.7 hp. air-cooled Westbend gas engine, \$20; 1938 Dodge panel truck, rigged for camping, \$95; 13' Power-Cat runabout, twin 16 hp. outboards, full controls, extras, ski equipment, custom trailer, \$1600. EX 8-5201. A  
ELECTRIC DRYER, Kenmore automatic, used 2 years, \$100. FR 5-5618. A  
SEWING MACHINE, Sewmar, attachments, 20 year guarantee, take over 13 payments of \$10.37. HO 5-7242. A  
BABY BUGGY, Welsh, \$7.50; American Flyer freight TRAIN SET, 4'x8' plywood bed, \$20; 1950 HILLMAN 4-door sedan, \$195. DA 6-5558. A  
HUDSON, 1949 4-door, overdrive, take over payments, \$25.50 month. HA 1-3508. A  
TRAIN SETS, 2 complete Lionel, mounted on table 7'6"x4', \$115, terms; boy's BICYCLE, \$20. CR 6-8345. A  
WIRE RECORDER, Webster, needs minor adjustment, \$40. GA 7-1324. A  
GAS RANGE, high broiler, timer, \$50. OX 8-2057. A  
MISCELLANEOUS, window frame, Venetian blind, \$25; utility cabinet, \$10; 2 electric heaters, \$3 & \$2; 2 lawn chairs, \$5; 4 wicker chairs, \$2 each; chest drawers, \$20; 2 inside panel doors, \$15. EX 8-0665. A  
BICYCLE, girl's 24", Schwinn, \$20. FR 7-1807. A  
CHEVROLET, 1950 hardtop, extras. AX 5-2744. A

## FOR SALE

BREAKFAST NOOK, 5', for corner, chrome and formica table to match, \$55. DA 4-7861. A  
MISCELLANEOUS, 16" boy's bike; 14" girl's bike; 7" TV; tank vacuum cleaner; 2 end tables; coffee table. PL 8-7335. A  
RIFLE, 30.06 Springfield sporter, star gauge barrel, detachable swivels, custom stock, cheek piece, ebony fore-end, pistol grip cap, M&S scope, Redfield mount, \$135. AX 1-8776. A  
BIKE, boy's 24", \$15; studio COUCH, \$15; blonde mahogany BED FRAME, nite stand, \$15; Kine Exakta CAMERA, Tessar F/2.8, \$75. EX 5-0575. A  
MISCELLANEOUS, roll-a-way bed, \$12; man's overcoat, 42-44, \$10; wrought iron, \$7; bread board, rolling pin, \$1.50; iron skillet, \$1. GR 7-1539. A  
SHOES, men's brown dress, size 8 1/2; ladies' navy blue and black heels, size 7AAA. OR 4-8164. A  
TRUCK, 1956 GMC, tool box, lumber rack, \$1200; UTILITY TRAILER, enclosed, \$50; COMET, 16", 3 hp. on trailer, extra lead wire, blade, \$550. GL 4-5150. A  
KITCHEN SET, chrome, 2 chairs, \$25; traverse DRAPES, 9 widths, 96" length, \$25. FR 6-3981. A  
SOFA, Kroehler, slip covers, \$10. OR 2-7679. A  
ROADSTER, 1954 Singer, 4 passenger. FR 5-7387. A  
MISCELLANEOUS, air compressor, commercial, tank, filter, hose, spray gun, \$150; motorscooter, Allstate, 1952, \$75; motorcycle, Harley 45, \$275; Raytheon 17" TV, radio, phone comb., \$100; bedroom suite. DA 4-0507. days. A  
TABLE SAW, Craftsman, 6" tilting table, \$25. FR 2-0437, after 11 a.m. A  
BED, maple, \$15; antique ROCKER, \$4.50; travel steam IRON, \$6; lamps, pictures. OR 4-2623. A  
CAMERA, 4x4 CM Rolleiflex, case, F.2.8 Tessar, filters, shade, meter, \$65. LU 2-6790. A  
FORD, 1950 2-door. \$485. OR 4-9419. A  
LUGGAGE TRAILER, 2-wheel, heavy duty, DA 3-3251. A  
MISCELLANEOUS, electric range, \$60; 40"x60" plate mirror, \$35; end tables, 3, \$10 each; child's potty chair, \$2; floor lamp, \$2.50; cast iron laundry tray, faucets, \$15. TE 1-2973. A  
DODGE, 1949 Coronet club coupe; filter-flo auto. WASHER; Frigidaire Imperial REFRIGERATOR-FREEZER comb. FR 5-8550. A  
BICYCLE, man's Schwinn, won as prize, can be exchanged for lady's, \$45. TE 3-4191. A  
MISCELLANEOUS, Philco walnut cabinet radio, record player, \$25; bathroom heater, \$2; small jia saw, \$5; diamond ring, matching wedding band, \$50. FR 9-4928. A  
GOLF CLUBS, bag, cart, 9 irons, 3 woods, \$50. Box 417. A  
WORK BENCH, vise, \$30; box TRAILER; 17" GE TV; McGregar SPEED BAG, \$10. Box 416. A  
TRAILER DOLLY, cantilever, \$35; BUNK-BEDS, wood, mattresses, \$10. Box 415. A  
BOX SPRING, mattress, Van Vorst, \$40. DA 6-0340. A  
HOUSE, 2-bedroom, carpeted living room, patio, fenced, near school, bus stop, equity. payments \$68.35 mo. TE 5-5863. A  
TRAIN, Lionel, freight set plus extras, \$40. FR 9-0019. A  
ROASTER, Westinghouse electric, \$22.50. PL 8-3429. A  
TRAILER, 4'x6', \$35. GE 8-1095. A  
SPOTLIGHTS, 2 Appleton teardrop, need rechroming, \$20. GR 9-2797. A  
VOLKSWAGEN, 1953, sunroof, \$950. GA 3-1363. A  
PROPERTY, orange grove and rental, 4 1/4 acres oranges, 3/4 acre being planted to Fuerte avocados, will sell with 1/2 oil rights, Yorba Linda, 30 miles east of L.A. PL 4-8142. A  
SAILBOAT, Sabot class, year old, ribbon grain mahogany hull, glass covered, \$225. GR 7-1643. A  
RANGE, O'Keefe & Merritt gas, chrome top, glass door oven, broiler, clock, timer, \$150. Box 422. A  
SKIN DIVING EQUIPMENT, 2-pc. dry Bel-aqua suit, \$15; 4 rubber torpedo gun, \$15; face mask, \$2.50. Box 421. A  
FURNITURE, 3-pc. sectional, modern, \$95. Box 420. A  
CAMPER, 1951 panel truck, hitch, bunks and camping equipment, \$450 all, \$350 without camping equipment. Box 419. A

## WANTED TO BUY

CAMERA, slide PROJECTOR; luggage TRAILER. DA 4-5532. B  
CEMENT MIXER, small, electric powered preferred. TE 1-2973. B  
HOUSE, 3-bedroom, South Bay area, within 12 miles of Hawthorne facility, have large cash down, principals only. OR 2-0809. B  
KITCHEN CABINETS, new or used; used CEMENT MIXER; cement or cinder BLOCKS. DA 6-5558. B  
PLAY HOUSE, child's, approx. 6'x8'. OS 6-8743. B  
MISCELLANEOUS, highchair, playpen, highwina light airplane. FR 5-2758. B  
BIKE, 20" boy's. Box 410. B  
RECEIVER, transmitter or converter for 2 meters, mobile use. 12 volt. Box 412. B  
DESERT AIR LAMP. OS 6-1025. B

## WANTED TO BUY

CHEVROLET, 1946-1952, body must be in good condition, engine not necessary, car does not have to be in running condition. GA 4-5769. B  
CRANKSHAFT, model B or C, in good condition. DA 3-0979. B  
MAGAZINES, Ford Times, back numbers, 10c each. FR 4-0526. B  
GAS LOGS, for fireplace; DRAPES, TRAVERSE RODS, for large living room. OS 6-4723. B  
DESK, flat top, side drawers, full or 3/4 size, PL 9-6332. B  
ELECTRIC MOTOR, 3/4 or 1 h.p., in good condition. OR 7-6021. B  
RACER, quarter midget. UN 3-9315. B  
DOG HOUSE, for small dog, reasonably priced. TE 5-4874. B  
MISCELLANEOUS, .22 Mossberg semi-automatic rifle; .38 S & W hammerless revolver; vacuum cleaners, Kenmore upright & Hoover tank, attachments; ABC wringer washer; trade for furniture, concrete mixer, pipe. OS 6-5253. C  
T-BIRD HARDTOP, 1957, with portholes, black, trade for 1957 T-Bird hardtop, black, without portholes. PL 1-3158. C  
RENTALS OFFERED  
HOUSE, 5-room, unfurnished, Buena Park, lease required, children welcome. AX 4-7191. days. E  
APARTMENT, 2-bedroom, unfurnished, disposal, \$85. TE 1-2973. E  
APARTMENT, furnished single penthouse, Manhattan Beach, \$85, lease; APARTMENT, large 1-bedroom unfurnished, Manhattan Beach, near ocean, \$85, yearly lease. AX 3-2294. E  
BACHELOR APARTMENT, no kitchen, newly decorated, near Northrop, utilities paid, available Nov. 16, \$60. OS 6-3326. E  
APARTMENT, 1-bedroom, disposal, near Northrop. PL 4-2570. E  
ROOM, in large home, man preferred, near Northrop, \$10 week. PL 5-0168. E  
HOUSE, 4 rooms, knotty pine, adults, Redondo, \$85. FR 6-2300. E  
HOUSE, 2-bedroom, carpet, drapes, stove, refrigerator, washer, fenced, 2-car garage, near school, Culver City, pet allowed, \$140. PL 1-3858. E  
HOUSE, 3-bedroom, den, 2 baths, fireplace, covered patio, 2-car garage, near Northrop-Anaheim, \$110. JE 7-0941. E  
PERSONALS  
LOST, key case, 12 keys, license tag identification, reward. TE 2-4052. L  
FOUND, wedding rings, 2, men's, yellow gold, inscribed, white gold, inscribed, call Lost and Found, Ext. 2141. A  
RIDERS WANTED, 2 or 3, to or around Kansas City, Mo., share driving, expenses, leaving Nov. 16-19. Box 414. A  
SHARE HOME, want girl to share 3-bedroom furnished home with 2 other girls, near ocean, Manhattan Beach, \$43. FR 2-5215, 5-7 p.m. L  
SHARE HOME, working woman to share 3-bedroom house and expenses, day-shift preferred, child welcome. FR 5-8851, before 3:30 p.m. M  
FOR SALE OR TRADE  
CHRYSLER, 1955, 300 2-door hardtop, power steering, brakes, \$395 down or car of equal value, terms on balance. OR 7-6832. M  
RIFLE, 22 cal. Mossberg bolt action, clip type, ammo., extra clips, \$25 or trade for saltwater spinning rod and reel. DA 4-8586. M  
LINCOLN, 1956 Premiere, 2-door hardtop, full power, sell or trade equity for sports car, boat, antique car. EA 2-1885. A  
DEEP FREEZE, 21 cu. ft., chest type, sell or trade for 12-16 cu. ft. upright. NE 8-2638, 9 a.m. - 2 p.m. M  
PLYMOUTH, 1956 Savoy V-8, push-button drive, trade equity for older car, take over payments. DA 4-8845. A  
ORGAN, Hammond B2, 11 speaker, Hammond-Tone cabinet; new Dallape Organ-Tone ACCORDION, accept equity in 3-bedroom home or 2nd trust deed. NE 2-3602. M  
BUICK, 1957 4-door hardtop Riviera. OR 4-4088. M  
TRANSMISSION, 1938 La Salle, \$50 or trade for outboard motor. KE 3-3078. A  
JAGUAR, MK IV, sliding roof salon, concours winner, \$1495; 1948 AUSTIN A40, A90 Healey engine installation; Craftsman 24" reel power MOWER, needs sharpening, \$75 or trade for rotary, self-propelled. FR 7-2552. A  
BARBECUE UNIT; gas HOT PLATE; OIL SPACE HEATER, Duo-Therm, stove pipes. OS 6-6361. M  
BOAT, 18' Burchcraft cabin cruiser, Mark 30 Mercury, fully equipped, 2 bunks, trailer, equipment purchased new in March. UN 4-5057. M  
FORD, 1951 4-door custom, \$225. Box 418. M  
CAMERA, 4x5 Busch Pressman, F7.7 lens, 4x5 DeJure enlarger, case, film holders, filters, \$150 or trade for hi fi equipment. DA 4-7146. M  
JAGUAR, 1952 roadster, 2 tops, sell or trade for late model sedan or station wagon. FR 9-3128. M  
GUN, Colt .380 automatic, nickel plated, holster, \$25 or trade for Remington model 14A, .30 cal. EX 7-9900. M  
TRICYCLE, for aqes 4-7, \$12 or trade for electric train. TE 4-2480. M



## Three Leagues Start Action As Basketball Season Opens

Action on the basketball courts starts this week. Nineteen teams launch the winter session in three round-robin leagues with a total of 32 contests on the calendar.

First games were scheduled for last Monday in the day shift Snark League. Eight teams in

this league will play each Monday from 6:30 to 10:30 p.m. in the Washington High School gym, according to Commissioner John Mihelich.

The day shift Scorpion League starts tonight at the Freemont High School gym and the six teams in this league will play each Wednesday from 6:30 to 10:30 p.m.

Dave Carney, night shift commissioner, reports that five teams in the night league are scheduled to play each Monday from 9:30 a.m. to 12:30 p.m. at Sportsman's Park.

Highlight of the season will be awards for the highest scorer in each league, most valuable players and selection of an all-star team. Winning teams in each league will be presented trophies and a two out of three game play-off between the top teams will decide the plant championship.

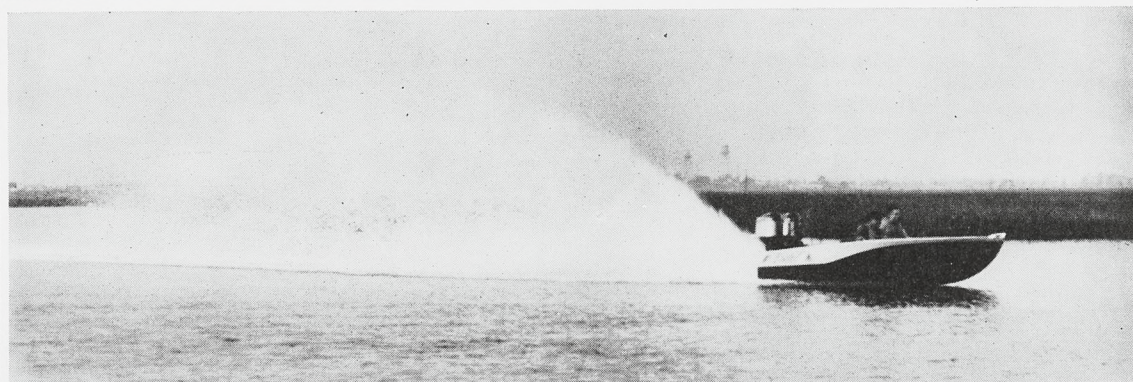
### YULE TOURNEY SET FOR BOWLERS

Entries open next Monday, November 11, for the annual NRC Christmas Bowling League. This is an all-facilities event with entry forms available at all Personnel Activities Offices.

The tourney will be held December 27, 28, and 29 at the new Roselanes on Rosecrans Boulevard. Categories of participation include: teams—mens, womens and mixed; doubles—mens, womens, mixed, and husband and wife; singles—men and women.

# SPORTS

The Northrop News



PUSHING 60 MILES PER HOUR—"Mr. Bristol" and pilots Ray Geer, Steve Sabo.

## Norcrafters to Vie at Salton Sea

Outboard boating enthusiasts will focus attention on the Salton Sea next Sunday, November 10. This is the date of the first annual stock outboard races at Sundial Beach in which several Norcrafters will participate. Also, a host of Norcrafter spectators are planning to be on hand.

A new design in boats will make its first appearance in the 90 mile race. The "Mr. Bristol" (see photo of trial run), piloted by Northrop's Ray Geer and Steve Sabo, is regarded one of the hottest contenders. New bottom features "full surface" which gives greater stability and higher speed for length of boat. Ray Geer explains that at top speed the "Mr. Bristol" literally floats on air and just the tips of the outboard motor blades cut the water.

Competitors in the race include Norcrafter Tom O'Malley, Roy Rogers, Dick West, Ivan De Busk, Doug Jones, Ray Ledger, Jack Ward and other Southland boaters.

Three members of the newly activated Coast Guard Auxiliary Flotilla 65 will be on hand with their craft to serve as patrols, turn boats and rescue standby. In charge of the Flotilla complement will be Norcrafter Doug Robbins; assisting him, Roy Sigman and Don Quinlivan.

The race begins at 8 a.m. with

boats in the water at 7:30. Slower class craft are slated to start first with faster classes following at three minute intervals. The boats will cover 90 miles over an 18 mile course.

Dorothy Bennett, the NRC Boat Club's "Miss Rooster Tail", will make the trophy presentations to race winners.

### WINNING GOLFERS NAMED IN TWO LEAGUE PLAYOFFS

Hal Solomon and Bob Halliburton won first place in the NRC Twilight Golf League playoffs to capture the 1957 championship. Second place honors went to Bill Shirreffs and J. B. Wallace.

The Twilight League started last April with all rounds played on the Western Avenue Course.

In the Alondra Short Course League first place winners were Joe Gustin and Jim Gregory. Second place winners were Ken Busche and Dick Peters.

Next big event for Northrop golfers will be the forthcoming Christmas Tournament at Western Avenue. Play will be held December 26 and 27, according to Chuck Pinegar, commissioner. He said full details will be announced shortly.



**FLOTILLA 65** — First photo of U. S. Coast Guard Auxiliary Flotilla 65 with 21 members of the Northrop Boat Club. First row, from left, John Siefert, Doug Robbins, Steve Sabo, John Lindhardt, Jack Shannon, commander, Don Quinlivan, Dick Connor, Elvin Pritchard, and Fred Wheeler. Second row, Robert Robinson, Bill Murphy, Theron Whitmore, Don Weaver, Robert Mahr, Nelson Burris, Robert Walter, Kenneth Payne, Don Gray, Ed Freitas. Missing are Thomas Ash, Frank Lyons, Nathan Goode, and John Slack, vice commander.

### EL SEGUNDO-LAX DANCE SATURDAY

The portals of the Lafayette Hotel ballroom in Long Beach will open to Norcrafters for the annual El Segundo-LAX Facility dance, Saturday, November 9. In addition to dancing and entertainment, highlight of the evening will be presentation of NRC trophies won during the summer.

Tony Pinto's orchestra and the Borden Twins are on the bill. Tickets are already going at a fast pace, report Don Riddle, Charlene LaTendresse, and Larry Long. Norcrafters who have not yet made reservations can contact the above for tickets.

## Car Club Stages Fun Rally, Winners Due at Next Meet

This was a good one on sports car drivers. It was the NRC Sports Car Club's Fun Rally for October. First half of the event was a time and distance rally with speedometer and tachometer painted over. Second half involved a search for locations using a map furnished to plan the shortest route.

It was fun, too, according to rallymaster Don Black. Twenty-two cars turned out for the event which originated at 120th and Crenshaw, covered eastern LA County and part of Long Beach, and terminated at Imperial and Crenshaw. Tabulation of results is underway and winners will be announced at the Club's November 14 meeting.

### TEST LAB DANCE TICKETS ON SALE

Over 1000 dancing feet will grace the Western Avenue Country Club ballroom Saturday, November 16, when the Engineering Test Lab holds its eighth annual caper. Program of dancing, door prizes and music by Gene Cox and his orchestra is sparking ticket sales.

Tickets are now on sale by members of the dance committee and department clerks. Price is \$1.50. Dress for the evening is semi-formal. The affair starts at 9 p.m. and winds up at 1 a.m.

Members of the dance committee are Nancy Olson, Jo Anand, Jim Sanzaro, Julie Reed, Dick Arthur, Ken Payne and Wayne Willis.

Dick Flude, member of the NRC Sports Car Club who was named "1957 Championship Rally Navigator" from the Southern California Council of Sports Car Clubs, has been extended a special invitation. He has been asked to be a navigator for a Simca sports car in the \$8000 rally to Mexico. Scheduled for November 30 and December 1, it will be a 24 hour run terminating in Acapulco.

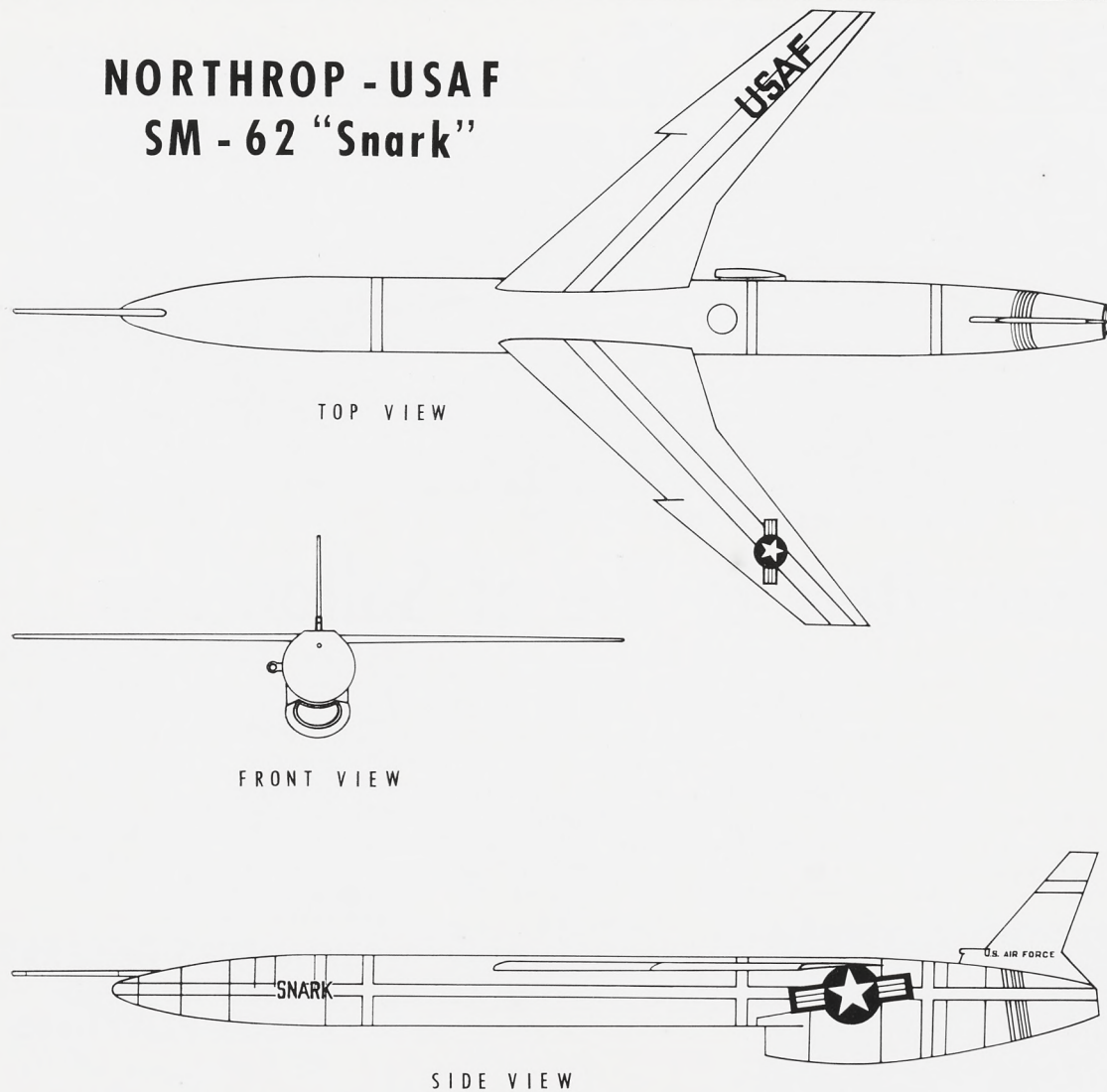
### NEW TOASTMASTERS—

Norcrafter Club 2583 officers, from left, Howard Cornelius, pres.; Ernie McNeil, ed. v-p; Walt Brown, admin. v-p; Bill Brown, publicity; Larry Knight, treas.; Frank Sass, sec.; and John Donnellau, sgt. at arms. **SPEAKER OF EVENING**, Emil Lockman, right, receives trophy from Shawn.





## NORTHROP - USAF SM - 62 "Snark"



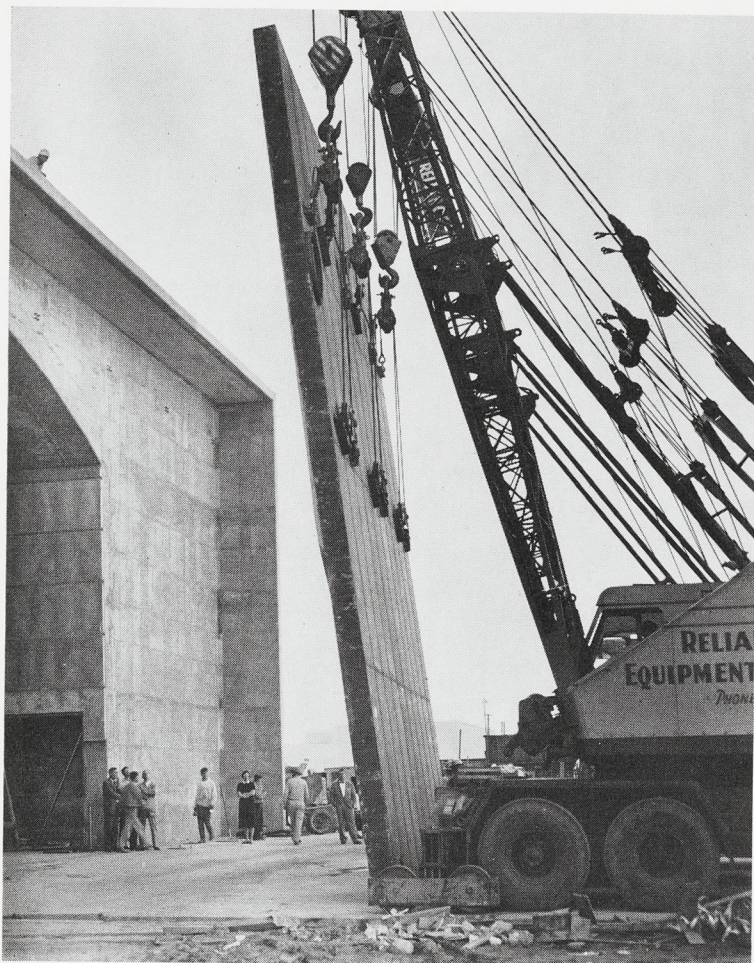
**FOR MODEL MAKERS—** Detailed three-view of the Snark, America's first intercontinental missile now in production for assignment to operational units of the Strategic Air Command. The Snark measures 69 feet in length, 15 feet in height and has a wing span of 42 feet. Powered by a Pratt-Whitney J-57 turbojet, the Snark is capable of delivering a nuclear warhead to any military target in the world. The Air Force has reported several successful firings of the Snark during the past few weeks at Cape Canaveral, Florida. SAC missilemen are now in training at Northrop.

## Northrop News Pictorial



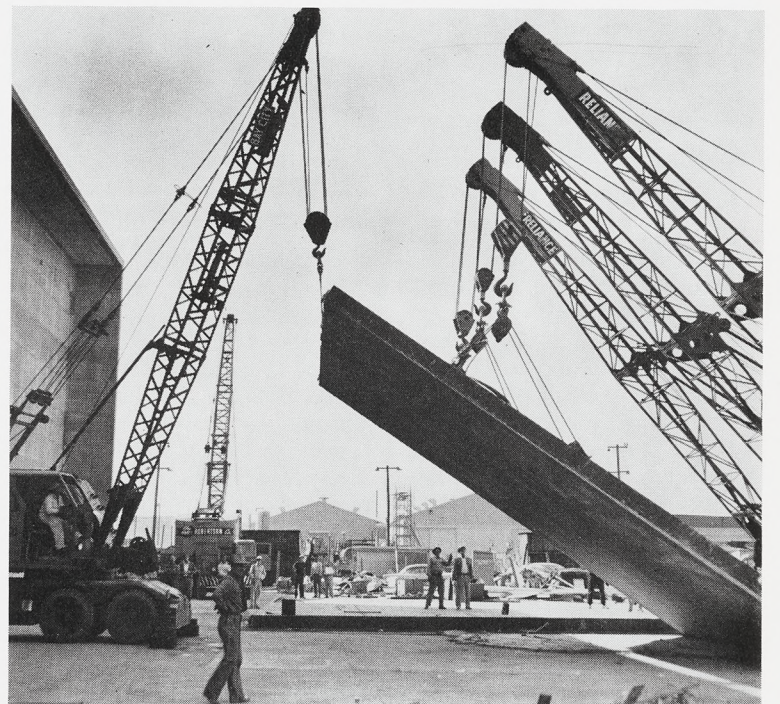
**SETTING THE STAGE—**for the new in aeronautics. Wind tunnel men—Ernie Keraly, Maurus Ludwig and Lynn Christensen, model builders, position a part in the tunnel's throat where the hurricane winds of simulated flight will reveal its airborne secrets. Force of air streams against the part will be transmitted to instrument panel where engineers record findings to check aerodynamic design.

## Big Doors for the Countdown--!



**BIG POWER—!** Two doors, 90 tons of concrete and steel each, will guard the Snark in the count-down building during pre-flight testing for the Strategic Air Command. Three cranes were not enough—a fourth was wheeled in to assist.

**CRANES TRIUMPH** over gravity as first door is balanced nearly upright. Here it is being moved into position for installation. Dimensions per door—30' x 36', 12" thick. A record? Designers believe so!



## A Woman's Touch

**DOROTHY KING**, Paint Shop, watches results of infra-red cookery—. Batch of spray painted parts comes through via conveyor line, done to a turn, paint dry and hardened by this off-end-of-spectrum light and heat, ready for assembly. Far cry from pies and cakes that Dorothy might cook at home in her own kitchen, she knows that same attention to detail produces same results—high quality.





## NEWS BRIEFS

With this issue, the Northrop News prints the first "News Briefs". Purpose of this column is to help keep Norcrafters up to date with the very latest management information on company and customer affairs.

**Military funding—** The government has defined policy on funding of CPFF contracts. Eighty per cent will be borne by military, 20 per cent by company, with complete payment being made on product delivery. Government formerly financed CPFF 100 per cent. Policy yet to be declared has to do with over-normal interest expenses incurred by industry for funds needed for added financing load. This will probably be adjusted by renegotiation or by allowances. New policy will stabilize company schedules, programs, and backlog, is management consensus.

**T-38 progress—** Factory reports first T-38 nose section is now out of the jig and second section in. First section is already receiving instrumentation, will be used in supersonic track tests at Edwards. George Nichols, chief, Associated Projects office, and his men are now building sled. Ejection seat will be fired at over-speed-of-sound to measure forces, displacement, and air-plane clearance. Track is also Northrop-built.

**Supersonic fighter—** The N-156F twin-jet, Northrop supersonic counter air fighter designed for NATO and Pacific area countries, has following: can use small unprepared fields or highways, will weigh one-third less than similar aircraft—with this feature combat ability will, of course, be outstanding, will have wide choice of deadly armament, production costs will be one-half of conventional aircraft, fuel consumption will be less than half of that required by single larger engine, maintenance costs will be half, ground crew hours two-thirds. More on the N-156F when security permits.

**High level visit—** Lt. General Charles G. Myers, Air Training Command, and staff who visited Northrop on 7 November for T-38 briefing, held information sessions with project people, were pleased with progress. Party was here from 9 'til 1. They represent the Command that will use the airplane and constant communications contact, necessary throughout development and manufacture, affords opportunity for customer input and suggestions, aids step-by-step evaluations.

**Quotes from Vice-president and General Manager Robert R. Miller:**

**On competition:**

"Even though the funding situation has been relieved some we are intensifying our efficiency drive. We know that we must improve our competitive position to insure full participation in weapon systems of the future."

**On organizational streamlining:**

"Customer Service organizations have been brought under one director—Lee H. Smith. Included are Field Service, Publications, Logistics, Customer Training, Operations and Administration. This move will centralize product services in the field under one head, a streamlined way of handling a most important job. Efficiency will go up, costs will come down—operations saving target is \$250,000 annually!"

"Newest reorganization at Northrop is in Manufacturing Division. Highway Transportation department and Internal Transportation department have been consolidated under Materiel. Estimated savings—\$87,619.00 annually."

**On company travel:**

"We are going to cut travel in half starting November 1. How—? There will be no non-essential travel. Attendance at out-of-town professional society and technical meetings will be pared to the bone."

**On telephone expense:**

"As a starter, divisions are reducing lines and equipment 20 per cent. At presstime, telephone cost reduction program had accounted for 350 lines, 1100 instruments."

## Norcrafters to Help Make Christmas Season Brighter

One of the most rewarding traditions of the holiday season, the "Adopted Family" program, will be renewed again this year at Northrop.

For the fourth consecutive year, Norcrafters have expressed a desire to forego parties and exchange of greeting cards. Instead they will contribute gifts to help make possible a brighter Christmas for those less fortunate.

The "Adopted Family" program is completely voluntary.

Upon request by department the Personnel Activities Office will furnish information concerning an anonymous needy family.

This program has been popular during the past three years at Christmas time and has been regarded as one of the most appropriate expressions of the holiday spirit.

## Snark---5000 Miles and on Target

President Eisenhower told the nation in his television missile and science report "... the air-breathing Snark recently traveled over a guided course for 5000 miles and was accurately placed on target."

This Snark top accomplishment had been kept under security wraps until the President's announcement.

In a message to all Northrop Division personnel—Vice-president and General Manager Robert R. Miller paid high compliment to all Norcrafters who have contributed to the Snark program ...

"We have had to overcome many difficulties in the past—and we have problems yet to solve—but today it is rewarding to join with you in taking personal pride in having helped make aeronautical history.

"My sincere appreciation and congratulations for an outstanding job."

## PALLADIUM PRIVATE PARTY

The 1957 Christmas season gets off to a gala start Saturday, December 7, with the 5th annual NRC "Private Party" at the Hollywood Palladium for all Norcrafters.

Special surprise of the evening will be the door prize award of a beautiful color television set. Each ticket holder will have an opportunity to win.

Tickets are now on sale to Norcrafters and their friends at all facilities. Price is one dollar, including tax. Department clerks are handling the sales. As a special award for their industrious

efforts, department clerks will be eligible to win a new hi-fi phonograph player. The more tickets each clerk sells, the greater are her chances to win the hi-fi.

Featured musicians for the party highlight the evening's program. Sammy Weiss and his orchestra will bring to the Palladium some of Hollywood's finest musical talent and the "big band" style of music for which the Palladium is famous. Weiss is best known for his appearances with such musical notables as Benny Goodman, Tommy Dorsey, Victor Young and Phil Har-

ris. For many years he has been with the Jack Benny TV and radio shows.

Red Nichols and his Five Pennies, perennial jazz favorites, are also starred.

The color television set to be awarded is now on display in the new Plant I cafeteria. To be eligible to win, ticket buyers must fill out their name and address on the attached stub. This will be the only means of identifying the winner. The stub can be deposited at the Palladium on party night. It is not necessary to be (See PALLADIUM, page 4)

## Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, November 20, 1957

## SNARK STORY

### AIR FORCE DISCLOSES DETAILS OF SNARK RECORD-BREAKING FLIGHT OVER ATLANTIC

Northrop's Snark SM-62 has demonstrated ability to place a nuclear warhead on any target in the world with a 5,000-mile flight performed under conditions simulating actual operations, Lt. General Emmett O'Donnell, deputy chief of staff, USAF, disclosed last week. First disclosure of the historic flight was made by President Eisenhower.

### Radically New Radar Guides Hawk Toward Aerial Targets

A radar "eye" that ignores stationary objects but speeds the surface-to-air Hawk missile instantly toward a threatening moving aerial target was revealed in Washington by the U. S. Army. It made public new details of the Hawk air defense system, key defender of American cities against aerial invaders flying at even the lowest altitudes.

The Hawk weapon system was displayed publicly for the first time at a combined exhibit of Raytheon Manufacturing Company and Northrop Division at the annual meeting of the Association of the U. S. Army in Washington.

Northrop is major subcontractor for Hawk missile airframe components and system support equipment such as the mobile loader and launcher. Raytheon is prime contractor for the Hawk program.

The Hawk's outstanding ability to seek out and destroy invaders even at tree top level, the Army said, is due to use of a

radically advanced radar technique in the missile's guidance system.

(See RADAR EYE, page 4)

### Tanker Wing Call Brings Fast Action

Fast action on the part of Norcrafters averted a costly, time consuming delivery of a replacement wing panel for a damaged Boeing KC-135 undergoing tests at Edwards AFB.

The Boeing plant at Renton, Washington, was requested to supply the wing panel as rapidly as possible. One solution would have been to arrange an airlift of the part from Renton. However, they chose to have Northrop make the delivery from Hawthorne where outboard wing panels for the aerial tanker are being manufactured.

Northrop received a call at (See WING CALL, page 2)

General O'Donnell said the flight, which took place during the night of October 31, was the world's first known demonstration of a true intercontinental missile capability.

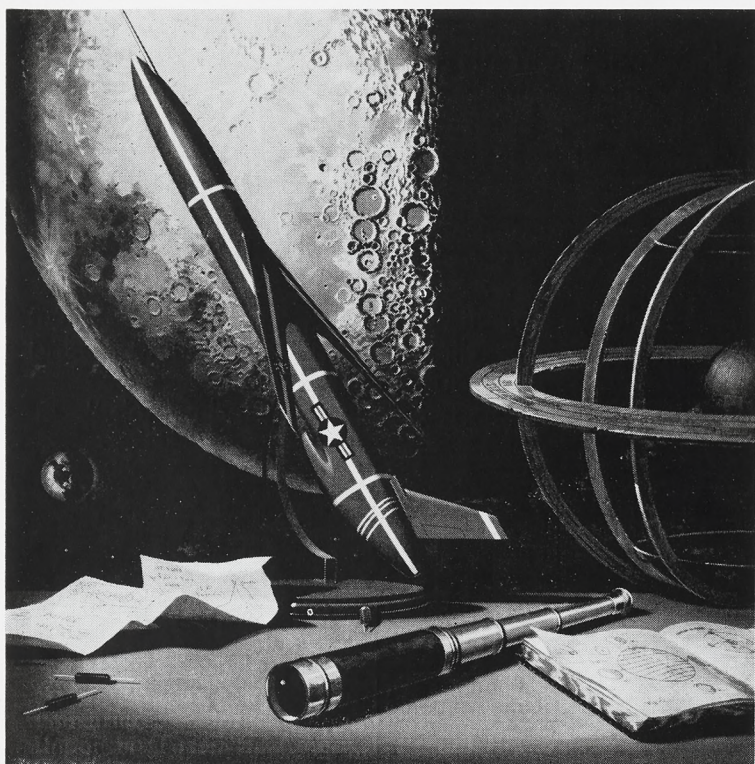
General O'Donnell, former commanding general of the 15th Air Force at March AFB in Riverside, disclosed details of the record-breaking Snark flight at an Air Force press conference in Chicago.

The Snark, launched from the Air Force's Missile Test Center at Cape Canaveral, Florida, was ordered to attack a target near Ascension Island in the South Atlantic. The pilotless, swept-wing bomber, capable of speeds approximating the velocity of sound, delivered its payload, a simulated hydrogen warhead, on the target with unprecedented accuracy, it was disclosed.

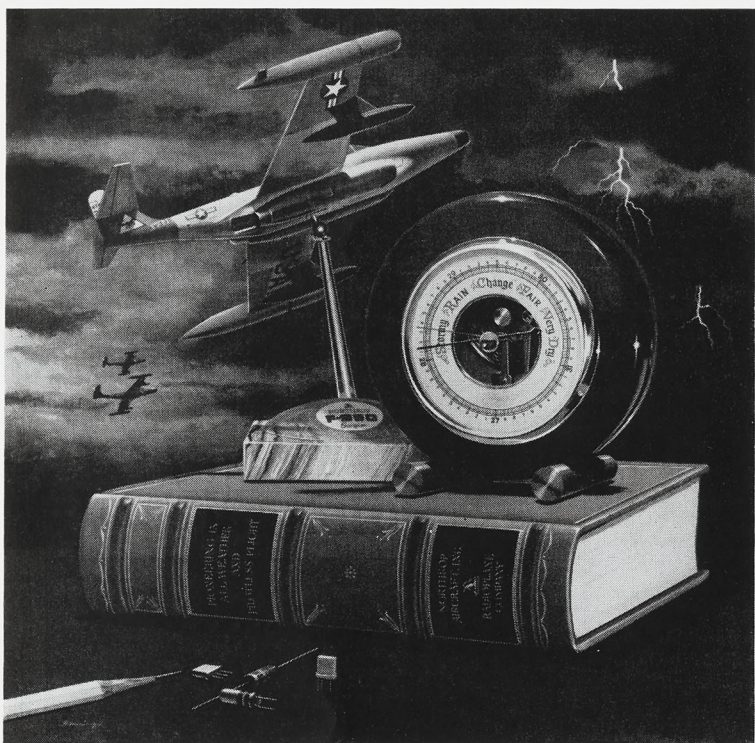
Now in production for the Strategic Air Command of the U. S. Air Force, the Snark has been undergoing proving flights from Cape Canaveral for some time. Fifty flights have been made and total distance flown is equal to three trips around the world. In many instances the missiles have been recovered virtually intact, to be reflown at con-

(See SNARK, page 6)

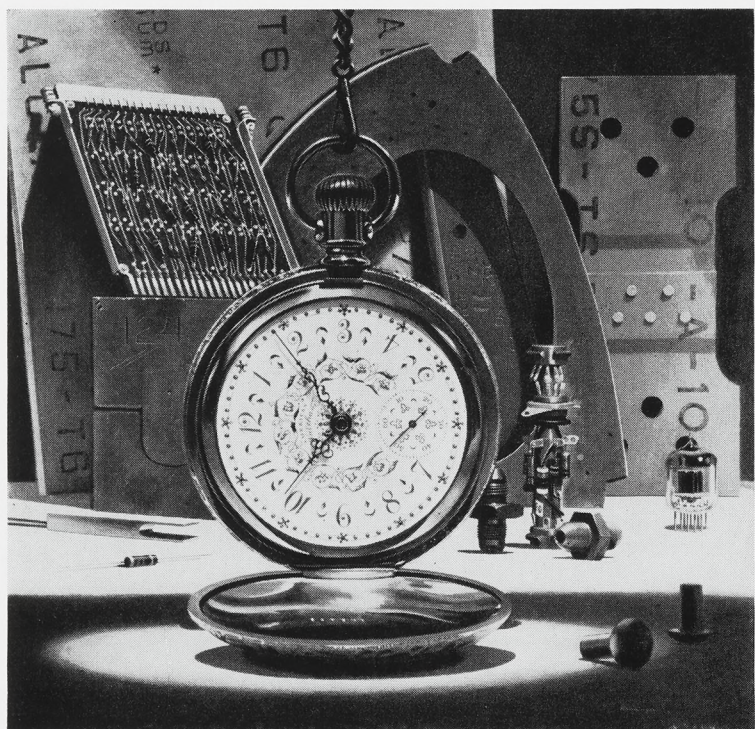




**NORTHROP AD** painting used by American Rocket News for its first cover. (See story.) Theme of this painting pointed up Northrop foresight and long-range planning as symbolized by the telescope, globe and moon.



**OUTSTANDING EXAMPLE** of symbolism appears in this familiar painting featuring the famed Northrop F-89 Scorpion all-weather jet interceptor. Barometer and menacing skies in the background signify adverse weather conditions under which F-89 can perform. Book in foreground is one of several used to portray Northrop achievements. Although non-existent, many requests come in for copies. Original painting was requested by the Air Force and now hangs in the Pentagon.



**NORTHROP PAINTINGS** receive considerable attention even to the point where observers write in. A letter, prompted by the ad above, pointed out that hands on the watch were not accurately synchronized. Such details serve to emphasize that Northrop ads get a close going-over.

# Northrop Ads Use Unique Approach To Achieve Five Major Objectives

Northrop Aircraft ranks as the 120th largest corporation in America. Its contributions to the nation's defense and continued industrial leadership today and tomorrow will depend upon many of the same factors which have spurred Northrop's growth. Among them — advertisement of company products and capabilities.

## MAJOR OBJECTIVES

Basis for the corporate advertising program are these five key objectives—

1. Build product and company acceptance.
2. Identify T-38, Snark, Scorpion, N-156F counter air fighter, and all divisional products as part of the Northrop family.
3. Sell engineering, production and weapon systems management capabilities of the corporation.
4. Support national need for strong air power.
5. Keep engineers and scientists informed of Northrop accomplishments and long range objectives.

## SPECIFIC AUDIENCES

To achieve these objectives, Northrop corporate advertising is directed toward specific audiences. They include management groups of the armed forces, government, and industry as well as scientific and technical leaders and the financial community.

Northrop places its advertisements in publications which circulate to these groups—publications such as Fortune, the Wall Street Journal, Dun's Review, Aviation Week, American Aviation, Air Force, The Talon, and News Front.

Northrop's advertising pro-

gram is termed an institutional campaign. The ads consist of paintings which employ symbols to represent company products and capabilities, accompanied by a statement of Northrop's philosophy and objectives.

## A NORTHROP "FIRST"

Northrop was the first aircraft company to use such an approach and its advertisements have consistently attracted widespread attention. So much so, that other aircraft companies have patterned their programs along the same lines as the Northrop campaign.

Proof of the attention that the ads get is ample. Professional readership surveys indicate their success. For example, Northrop was first in readership of ads among aircraft advertisers in two aviation trade magazines on four occasions this year. In Aviation Week magazine, Northrop ads attracted the highest readership over a twelve month period in comparison with all other ads in the publication.

Publishers' interest in the ads is also an indication of their appeal. On numerous occasions, publications have displayed Northrop ads in premium positions because of their attractiveness. In addition, leading art clubs and professional advertising groups have bestowed awards to the company for its ads.

## UNUSUAL RESPONSES

Perhaps the most unusual examples of the response Northrop receives are the requests for books which are portrayed in the paintings. These requests have had to go unfilled because the books do not exist, but were used as symbols to represent Northrop

experience and capabilities. Northropers who have seen the ads displayed throughout the plants may recall some of these "books"—"Sixteen Years of Guided Missile Experience", "Pilotless Aircraft Research Data" and others.

## MAGAZINE COVER

American Rocket News, forerunner to the Astronautics magazine, used the painting from a Northrop ad for its first cover in April, 1957. In conjunction with the painting (see photo) the magazine wrote, "The contributions of science and industry in extending man's horizons are symbolized by this oil painting of the Northrop SM-62 Snark, the world's first intercontinental guided missile, posed against our next goal, the moon. Northrop Aircraft, noted for its long range vision, contributed this illustration to American Rocket News for its first missile cover."

American Rocket News was one of several publications that has requested use of Northrop ad paintings.

## ADVERTISING BOARD

Northrop's overall corporate advertising program is directed by the Advertising Board through the Advertising Office. Members of the board are President Whitney C. Collins, Robert R. Miller, vice-president and general manager of Northrop Division; J. Gil Nettleton, vice-president, Northrop International; William Tuttle, vice-president, Radioplane; Dr. William F. Ballhaus, vice-president, Nortronics; and A. V. Cline, director, Corporate Public Relations. The Advertising Office is staffed by Jack Laffin, manager, and Ray Cole, assistant.

# Hawk Missile Container Awarded Packaging Prize

A unique, Northrop-designed missile container which employs the use of arctic truck tires for protective cushioning was awarded first prize at the National Industrial Packaging and Handling Exposition.

A Northrop "first" because of its unusual characteristics, (see Northrop News, April 24, 1957) the container was developed for shipping and tactical use of Hawk missiles. The missile is inserted into a steel tube which is secured into two tire rims at each end. Arctic type truck tires comprise the suspension system which protects the missile from shock during shipment. A light steel tubular structure encases the tires and container to absorb rough handling.

This was the second year that Northrop Division entered the national packaging competition, with first prize scored each time. Judging took place during the October 28-31 exposition held at Atlantic City, New Jersey.

Special features of the Hawk missile container which attracted the attention of packaging engineers include the container's extreme low cost and light weight.

In addition to simplicity of design and use of low cost materials, one of the chief areas in cost reduction is the use of standard arctic type truck tires. In comparison with other possible

suspension systems, the tires provide complete protection at a small fraction of the cost of other systems.

Suitable for outside storage anywhere in the world under worst possible conditions, the Hawk container incorporates ease-of-use design. Two men, using simple hand tools, can open the container and withdraw the contents in two minutes or less. The container is also adapted to transportation by any means, including helicopter.

Design of the Hawk missile container is credited to the joint efforts of the Packaging Engineering Section, Harper Welton, supervisor, and the Hawk Project Office, Bob Shaftel, project officer. Extensive testing of the container was conducted under the direction of Royal Jackman, chief, Engineering Labs.

# Wing Call —

(Continued from page 1)

5:30 p.m. on Friday, October 25, and by 8:30, just three hours later, the wing panel was ready for delivery to Edwards.

This prompt action was the result of the concerted efforts of all departments mobilized under the leadership of John Brenehan, night operations manager.

Credit for the efficient handling of the unusual request goes to Norcrafters all along the line—Norcrafters who worked with Bob Reed and Harry Bates of Contracts; Ole Omley, Boeing Project Superintendent; M. C. Van Fleet, Boeing representative; Daniel O'Halloran, night chief inspector; Bill Minner, project general foreman; Lynn Moore of the Air Force Office; John Reed of Traffic; Steve Baldwin, head of the Boeing Wing Department; and John McNamara of Transportation.

Success of the entire operation prompted a complimentary letter from Boeing officials at Renton.

# Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 5

A NORTHROP AIRCRAFT INC. PUBLICATION  
Published every other Wednesday  
PUBLIC RELATIONS, NORTHROP DIVISION  
CHARLES BARR, Manager

CHARLES BRADFORD, Editor

Permission to republish material with credit to the Northrop News will be granted. News office phones—2456, 2457. Outside lines—OR 8-9111, OS 5-4611.



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday following publication.

## FOR SALE

OLDSMOBILE, 1956 Holiday 88, power equipment, low mileage, \$1895. FR 4-1889. A  
 FORD, 1957 Thunderbird, Ford-O-Matic, hardtop, PL 6-1656. A  
 COOKER, Westinghouse electric, stand, clock, \$40. OS 6-2109. A  
 COUCH, modern, wrought iron, 2-bolster, 2 years old, \$20. OL 2-1487. A  
 SOFA BED, matching club CHAIR, \$25. OR 4-4032. A  
 BOAT, 18' cabin cruiser, 70 hp. Chris-Craft engine, fiberglassed, must sell. NO 1-9360. A  
 RELAX-A-CIZOR, posture vest, \$115. OX 5-6195. A  
 BEDROOM SET, 4-pc., modern, \$75. EA 2-3122. A  
 BAR, blue leather, white trim, 50" long, 45" high, slightly curved, 3 shelves, 1 drawer, glass top, \$35. FR 9-9261. A  
 FORD, 1932, 3-window coupe, no engine, new dropped front axle. ME 0-4684. A  
 HEAD BOARDS, 2, leather, for twin beds. AX 1-0606. A  
 WASHER, Kenmore auto., electric dryer, \$175. FR 2-4281. A  
 VOLKSWAGEN, 1956, \$700 and take over payments, \$49.60. FR 2-8877. A  
 CHRYSLER, 1951 4-door, new paint. EX 9-3710. A  
 WASHER, Kenmore auto., \$60. DA 9-5484. A  
 PONTIAC, 1946, \$100. OR 7-4206. A  
 WASHER, ABC wringer, \$50. OR 4-5652. A  
 WASHER, Bendix Economat auto., new motor, \$70. TO 7-8357. A  
 TRAILER, 15' vacation, Aljo, electric brakes, \$800. DA 9-4065. A  
 FURNITURE, bedroom set, lamps, lounge. PL 9-0412. A  
 DACHSHUND, 6 months old, AKC, housebroken, \$35. OS 5-4994. A  
 HOUSE, 3-bedroom stucco, 5 years old, Torrance, fenced, landscaped, near schools, markets, \$12,500, \$300 or more down, payments \$25 week. TE 5-5108. A  
 CROSLY, 1949 convertible, \$65. FR 5-5881. A  
 WASHER, Kenmore auto., \$60. OS 5-5055. A  
 CHEVROLET, 1941 club coupe, 1952 Chevrolet engine. OS 6-7881. A  
 PIANO, upright, \$80. FR 6-3600. A  
 MOTORCYCLE, 1952 Harley-Davidson 74, Hydra-Glide, motor recently rebuilt by Rich Budlier, \$550. FR 9-9888. A  
 CORVETTE, 1956, OR 4-7244. A  
 TIRE, 7.10x15 Goodyear whitewall, new tread, tube, \$8.50. OX 9-6181. A  
 WASHER, automatic Bendix Economat, new rubber tub, \$75. OS 6-7763. A  
 TRAILER DOLLY, cantilever, \$35. Box 505. A  
 HOUSE, 1-bedroom, 2 R-2 lots, Lomita, fruit trees, \$12,000, \$3000 down. TE 2-5359. A  
 GUN, Belgian 3-bbl., 12 gauge, double over 7.65 rifle barrel, custom stock, cheekpiece, receiver, floor plate, triage guard, Krupp barrels, \$385. PL 5-2062. A  
 OLDSMOBILE, 1951 98 hardtop, electric windows, Hydra-Matic, must sell. AX 5-3196. A  
 MANGLE, Thor Gladiron, dial temp. control, folds, PL 5-9022. A  
 GEM STONE SLABS, to be used for lapidary work. OR 4-2352. A  
 ENCYCLOPEDIAS, American Peoples, 1957, blonde case, must sell, 8 vol. Hobbies & Crafts to buyer. Box 506. A  
 DRAFTING MACHINE, Bruning, 2 scales, 12" and 18", 4 years old, \$70. WE 1-8478. A  
 CORVETTE, 1957, 270 hp., 2 tops, extras, \$3050. FA 8-2360. A  
 FORD, 1947 V-8 2-door sedan. FR 8-2941. A  
 STOVE, apt. size, gas, \$35. TE 1-1527. A  
 NASH, 1952 Statesman 4-door, new crankshaft, bearings, clutch, brakes, overdrive, \$475. TE 4-7544. A  
 MERCURY, 1955 station wagon, fully equipped, best offer over \$2000. EX 9-4933. A  
 WASHER, Kenmore wringer, new motor, year guarantee on repairs. OS 6-8095. A  
 TRAILER FRAME, 2-wheel, spare wheel and tire, leaf springs, U bolt attachment, 6'x4'x3' angle iron frame, tubular axle, \$30. FR 5-5171. A  
 ROASTER OVEN, Westinghouse, baking dish, grill, \$25. WE 1-7830, 5:30-8:30 p.m. A  
 HOUSE, 3-bedroom, double garage, corner R-2 lot, insulated, newly decorated in and out, \$12,995, \$1750 down. OS 5-5055. A  
 FORD ENGINE, 1937 V-8, disassembled, cleaned, valves ground, \$15. FR 4-2978. A

## FOR SALE

MOWER, Clinton power, gasoline, \$25. DA 3-3621. A  
 DRYER, Kenmore, used 8 months, \$95. FR 6-1367. A  
 REFRIGERATOR, Gibson 11', \$100. PL 4-8927. A  
 DINING SET, maple, Lazy Susan style, 4 captain's chairs. PL 3-8758, week-ends. A  
 DINETTE SET, chrome, \$30. TE 3-9902. A  
 FREEZER, 17.2 cu. ft. Frigidaire, \$150. DA 4-6469. A  
 BEDROOM SET, blonde, DA 4-6466. A  
 INCOME PROPERTY, Big Bear Lake, 2 units, 1 1/2 bedrooms each, double garage, large room above, patio, on main highway, \$12,500. Box 501. A  
 PIANO, reconditioned upright, \$125. AD 4-8411. A  
 TRIUMPH, 1957 TR-3, wire wheels, tonneau cover, \$2595. Box 504. A  
 TRAIN SET, Lionel, extra cars, equipment, \$30. LO 6-1546. A  
 HOUSE TRAILER, 23', suitable for 2, \$600. OS 5-3081, days. A  
 BED DIVAN, CHAIR, DA 3-2052. A  
 REFRIGERATOR, 1955 Frigidaire, 9.3 cu. ft. \$125. TE 1-2077. A  
 PLYMOUTH, 1950 2-door deluxe sedan, \$125. DA 3-0721. A  
 SKI BOOTS, ladies', size 8, \$10. UN 3-5196. A  
 CHEVROLET, 1954 2-door sedan, Power-glide, new battery, seat covers, needs paint. OS 5-8220. A  
 FREEZER, 20 cu. ft., chest type Coldspot, \$200. OR 1-4608. A  
 DIAMOND RING, Masonic, 1/4 carat. AX 4-4613. A  
 FURNITURE, sofa, chair, ottoman, Provincial, \$60. DA 4-8974. A  
 VOLKSWAGEN, 1956, sunroof, extras. FR 6-4239, before 9:30 a.m., after 7:30 p.m. A  
 DRAFTING MACHINE, Bruning, 2 metal scales, \$70. OR 1-2562. A  
 BAR STOOLS, 4, maple, 30" high, curved back, \$25. FR 6-9891. A  
 BOXER PUPS, champion sired, fawn and brindles. PL 5-2828. A  
 STOVE, Woolwine 4-burner electric, double oven, \$25. DA 9-3217. A  
 FURNITURE, electric range, heaters, love seats, rugs, bed, lamps, tables. OS 6-8595. A  
 FORD, 1949 V-8 station wagon, needs rinas. \$175. EX 4-3642. A  
 PONTIAC, 1952 Catalina, fully equipped, \$425. OS 6-1018. A  
 HOUSE TRAILER, 22' Columbia, elec. ref., gas range, \$500. OR 2-7880. A  
 FORD, 1940 custom coupe, louvers, new valves, \$195. FR 2-7730. A  
 FORD, 1950 V-8 club coupe, overdrive, \$200. OS 6-5219. A  
 THUNDERBIRD, 1957, low mileage. PA 8-1284. A  
 CHRYSLER, 1949 Windsor 4-door sedan, 2 new tires, new battery, semi-auto. transmission, extras, \$350. OR 2-3358. A  
 HOUSE, 4% GI resale, 3-bedroom, carpet, drapes, corner lot. PL 4-6691. A  
 STOVE, Pan American, new Robert Shaw controls, timer, \$30. FR 8-2439. A  
 SPINET PIANO, Mehlin Bros., dark walnut, PL 7-1605. A  
 NASH, 1952 Rambler station wagon. FR 2-7386. A  
 CHEVROLET, 1949 deluxe 2-door, new clutch, transmission, \$250. DA 6-3607. A  
 STUDEBAKER, 1949 Commander 4-door, must sell. DA 9-5361. A  
 PLYMOUTH, 1957 convertible, kit, extras. \$2600. Box 503. A  
 TABLE SAW, 8" Craftsman, heavy duty, 1 hp., 20"x27" table, rip fence, crosscut guide, protractor, blades and cutters, motor wired for 120, can be changed to 220. \$100. HA 9-7879. A  
 REDWOOD FENCE, 6' high, 56', 1 1/2 years old, \$30. FA 1-0505. A  
 DINETTE SET, 4 chairs, red maple, needs refinishing. \$25. PL 6-5220. A  
 CHILD'S WORLD, 6 volumes, \$25. DA 9-1510. A  
 PING-PONG TABLE, paddles, \$20. PL 4-7810. A  
 PONTIAC, 1946 coupe, \$95. FR 2-6366. A  
 HOUSE, 3-bedroom, den, 2 car garage, landscaped, \$16,950. DA 3-0721. A  
 SKI BOOTS, women's, size 6 1/2, \$10; men's, size 7, \$5. FR 5-6395. A  
 PORTABLE HEATERS, gas Kenmore, connector, \$7; electric hy-temp, \$5. PO 3-5577. A  
 AUSTIN HEALEY, 1956 100, extras. OS 1-6473, days. A  
 TONNEAU COVER, black, for 1955-1956 Ford. GR 7-1937. A  
 CHEVROLET, 1947 club coupe, 2 spare tires, \$149. OR 2-6447. A

## FOR SALE

CRYSTAL, 1/3 overtone, 122.1 mc., \$5. HI 7-8455. A  
 RANGE, 42" Wedgewood, griddle, glass door oven, broiler, clock, timer, chrome top, \$160. FR 4-5935. A  
 STOVE, Wedgewood deluxe gas, 3 years old, \$150. EX 4-7575. A  
 GUITAR, blonde. FR 6-5384. A  
 DINING SET, 6 chairs, limed oak, \$50. FR 2-2631. A  
 CEL-O-GLASS, by DuPont, 3 100' rolls, clear plastic covered wire screen, in original packages, used for enclosures, \$35 each or \$90 for all. OR 7-4376, 7-8 p.m. A  
 HOUSE, 3-bedroom, 2 baths, Southwood tract, carpets, fenced, landscaped, patio, owner leaving. FR 6-1251. A

## WANTED TO BUY

HALF MOON PARROT. EX 4-1982. B  
 TONNEAU COVER, for 1957 Ford. FR 4-4140. B  
 REFRIGERATOR, apt. size electric. OS 6-8095. B  
 SLIDE PROJECTOR, 35 mm., 300 to 500 w. OR 4-9976. B  
 METAL DETECTOR & BLACK LIGHT. OR 7-8381. B  
 BUTANE CONVERTER, tank and equipment for converting car engine to butane, \$75-\$100. DA 9-6345. B  
 SPINET PIANO, state condition, finish, price, cash. OR 4-6816. B  
 BOOKCASE, spice CABINET. UN 3-5196. B  
 HOUSE, cash for your equity, take over payments. TE 4-5036. B  
 RELAX-A-CIZOR or Stauffer machine. PL 6-5220. B  
 AQUARIUM, 5-10 gal. FR 5-9842. B  
 LADDER, 20' - 24'. FR 2-6366. B  
 FORD, 1954 station wagon. OS 5-9054. B  
 BABY CRIB, ir. size., under \$10. FR 4-0348. B  
 BENCH SAW, 10". OR 1-2562. B

## FOR TRADE

PLYMOUTH, 1949 4-door, plus cash, for newer car. WE 1-8478. C  
 SCOOTER, 1951 Cushman Eagle, trade for small scooter, Doodle Bug or Playboy. OR 1-2058. C  
 LIFE RAFT, 7-man, trade for oscilloscope or V.T.V.M. CL 5-1301. C  
 OLDSMOBILE, 1957 Holiday 88, will trade my equity for 1953-1954 auto, balance \$2400, \$83 month, paid to Jan. 1, 1958. OS 5-8008. C  
 HOUSE TRAILER, 1956 33' 2-bedroom, never lived in, trade for equity in home, Torrance or Rolling Hills. KI 3-0441. C

## FREE (to be given away)

DOG, small black male, mixed breed, a good with children, free to a good home, fenced. OX 8-4279. D

## RENTALS OFFERED

APARTMENTS, 1 and 2-bedroom, modern, N. Inglewood, PL 9-0412. E  
 ROOM, w/bath, separate unit, Manhattan Beach, \$12 week. FR 2-1951. E  
 APARTMENT, 1-bedroom, stove and refrigerator, adults, \$60. DA 4-2959. E  
 APARTMENT, 2-bedroom, child and pet O.K., \$85, water paid. OS 6-2109. E  
 HOUSE, 2-bedroom, furnished, fenced, double garage, children and pets O.K., near Northrop, \$115. PL 9-9744. E

## RENTALS WANTED

HOUSE, 2-bedroom, N. Inglewood, couple, expecting child. FR 4-8141. F

## CHILD CARE WANTED

CHILD CARE, want woman to live in and care for 3 children, nights, in exchange for room and board. PL 7-1288. H

## PERSONALS

THANK YOU: Sincere thanks to the many Northrop friends and co-workers who have been so kind and thoughtful during my bereavement. KAY WALKER.  
 SHARE HOME, 2 young men to share Westchester furnished house, \$45, references required. OR 7-8466. L

## FOR SALE OR TRADE

HIDE-A-BED, modern, 6 months old, \$150 or trade for upright deep freeze. Box 507. M  
 FORD, 1957 Country Squire 6 passenger station wagon, power steering, brakes, trade \$1300 equity for smaller car, Nash or foreign, and assume payments. Box 502. M  
 GEIGER COUNTER, Precision 107C Professional, \$85 or trade for focal length lens, over 8" long, in shutter. AD 3-4729. M  
 PISTOL, Harrington & Richardson, 22 cal., holster; Remington 512A 22 cal. RIFLE, sell or trade for deer rifle, 30.06 preferred. FR 9-3128. M  
 CAT., hyd. Dodge, overhauled, \$1975. FR 4-7296. M  
 LAWN MOWER, new aears, just sharpened. DA 9-5361. M  
 COFFEE MAKER, Sunbeam automatic, \$16 or trade for new electric skillet. OS 5-6245. M  
 UTILITY TRAILER, 5'x6', 2-wheel, w/tarpaulin, \$50. FR 5-6764. M  
 RUG, 9'x12' hooked, pad, just cleaned, \$30 or trade for double bed. OS 5-9054. M



## RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
 CRENSHAW & 104TH ST., Inglewood. SHIRLEY DE BARDI (4800-48696, Ext. 631). OR 2-0259. 2-1  
 (Zone 4)  
 LA PALMA & MILLER RD., Buena Park. (Car pool desired. Can take 5 riders.) PAUL SHAFFER (5231-53082, Ext. 1581). JA 7-8309. 2-4  
 PUENTE & ROOT AVE., West Covina. (Car pool desired.) GEORGE PRESLEY (5563-23002, Ext. 2011). ED 8-6013. 2-5  
 (Zone 5)  
 DEL AMO & DOWNEY, Lakewood. (Car pool considered.) DAVID A. BARBER (5163-53191, Ext. 2288). HA 9-6903. 2-5  
 COMMONWEALTH & SPADRA, Fullerton. (Car pool considered.) HENRIETTA GOESER (5504-20839, Ext. 2645). LA 5-5641. 2-5  
 NICHOLAS & COMMONWEALTH, Fullerton. (Car pool considered.) AL GOODMAN (5449-17337, Ext. 1366). LA 6-4520. 2-5  
 ROSECRANS & STUDEBAKER, Norwalk. GORDON STRAIT (5563-24211, Ext. 2011). UN 3-8147. 2-5  
 (Zone 12)  
 CENTURY & REDFERN, Inglewood. MARGARET JO JEAN (5351-53834, Ext. 1661). OR 7-6427. 2-12  
 (Zone 13)  
 VENICE & SEPULVEDA, Culver City. GERALD J. FISHER (5421, Ext. 2242). 2-13  
 WILSHIRE & VETERAN, West Los Angeles. (Car pool considered.) B. C. BARTON (7721-26676, Ext. 2206). GR 7-1539. 2-13

7:30 a.m. — 4:15 p.m.

(Zone 4)  
 IMPERIAL HWY. & TELEGRAPH RD., Whittier. (Car pool considered.) G. J. MARINELLO (5980-35825, Ext. 2600). OX 3-7384. 3-4  
 ROSECRANS & VALLEY VIEW, La Mirada. (Car pool desired.) DICK TREMBLY (5910-45359, Ext. 2614). 3-4  
 (Zone 6)  
 PALO VERDE & WILLOW, Long Beach. (Car pool desired.) JOHN R. SNYDER (8910-29465, Ext. 694). HA 9-3768. 3-4  
 CONANT & PALO VERDE, Long Beach. (Car pool desired.) KARLA DIXON (9542-51034, Ext. 2228). HA 9-7732. 3-4  
 (Zone 8)  
 CRENSHAW & 156TH ST., Gardena. MARY LOU WICKHAM (1231-13350, Ext. 2331). DA 4-7690. 3-8  
 (Zone 9)  
 MEYER LANE & 190TH, Redondo Beach. VERA RIDEOUT (8920-27694, Ext. 1564). 3-8  
 (Zone 10)  
 INGLEWOOD & EL SEGUNDO, Hawthorne. LOIS HANSEN (4200-54390, Ext. 674). OS 5-9689. 3-10

8:00 a.m. — 4:45 p.m.

(Zone 1)  
 CRENSHAW & 108TH ST., Inglewood. (Car pool considered.) M. P. SODEIKA (3546-53825, Ext. 1516). OR 2-7174. 5-1  
 SANTA MONICA & WESTERN, Hollywood. H. GREER (3312-53657, Ext. 2775). HO 4-6094. 5-1  
 (Zone 2)  
 DENKER & 83RD ST., Los Angeles. DOROTHY L. MINNICH (USAF, Ext. 1915). PL 9-9775. 5-2  
 (Zone 5)  
 ARTESIA & ATLANTIC, Long Beach. LEONARD SCHROEDER (3544-43979, Ext. 2471). GA 2-8457. 5-5  
 LAMPSON & WEST ST., Garden Grove. (Car pool considered.) ANN RYAN (3142-32958, Ext. 2022). 5-5  
 (Zone 7)  
 WILMINGTON BLVD. & ANAHEIM, Wilmington. PAULINE TRIMMER (3120-37563, Ext. 1551). 5-7  
 (Zone 9)  
 SILVER SPUR & PALOS VERDES, Rolling Hills. (Grand View Palos Verdes, Tract; car pool desired.) ROLLIN STURGEON (3839-47242, Ext. 1592). FR 8-4345. 5-10  
 (Zone 10)  
 HERMOSA AVE. & 17TH ST., Hermosa Beach. (Ride urgently needed.) ROSEMARY L. PENNY (3120-48588, Ext. 2536). FR 2-0625. 5-10  
 (Zone 13)  
 FREEMAN & CENTURY, Inglewood. CHARLES H. ABNER (3476-53869, Ext. 2551). 5-13  
 (Zone 14)  
 BURBANK BLVD. & COLD WATER CANYON, North Hollywood. (Car pool desired.) LEONARD LEVENTHAL (3010-53908, Ext. 1266). PO 1-2109. 5-14

4:45 p.m. — 1:15 a.m.

(Zone 3)  
 CENTURY & FIGUEROA, Los Angeles. BILLIE JEFFERS (5508-43668, Ext. 2755). PL 4-7792. 8-3  
 SAN BERNARDINO FREEWAY & MOUNTAIN AVE., Upland. (Car pool or riders wanted.) ARNOLD ZAVITZ (5920-51830, Ext. 1725). YU 2-4296. 8-3

## RIDES WANTED

4:45 p.m. — 1:15 a.m.

(Zone 5)  
 ROSECRANS & CEDAR, Compton. ROSE E. CALLAWAY (5352-27451, Ext. 1453). NE 1-1002. 8-5  
 OLIVE & ATLANTIC, Compton. (Car pool desired.) ALBERT L. FOOTE (5920-49090, Ext. 1725). NE 1-0843. 8-5  
 Miscellaneous — Split Shift  
 (Zone 1)  
 VERMONT & ADAMS, Los Angeles. (Hours: 6 a.m. - 4:45 p.m.) LIONEL E. STANTON (5567-54707, Ext. 1356). RE 2-4440. 10-1  
 (Zone 8)  
 CRENSHAW & COMPTON, Gardena. (Hours: 7:15 a.m. - 4 p.m.) CAROL KEGLOVICH (6002-42988, Ext. 3691). OS 5-0674. 10-8

## RIDES OFFERED

7:00 a.m. — 3:45 p.m.

LA PALMA & MILLER RD., Buena Park. (Car pool desired. Can take 5 riders.) PAUL SHAFFER (5231-53082, Ext. 1581). JA 7-8309. 12-4  
 PUENTE & ROOT AVE., West Covina. (Car pool desired.) GEORGE PRESLEY (5563-23002, Ext. 2011). ED 8-6013. 12-5  
 (Zone 5)  
 DEL AMO & DOWNEY, Lakewood. (Car pool considered.) DAVID A. BARBER (5163-53191, Ext. 2288). HA 9-6903. 12-5  
 COMMONWEALTH & SPADRA, Fullerton. (Car pool considered.) HENRIETTA GOESER (5504-20839, Ext. 2645). LA 5-5641. 12-5  
 NICHOLAS & COMMONWEALTH, Fullerton. (Car pool considered.) AL GOODMAN (5449-17337, Ext. 1366). LA 6-4520. 12-5  
 ROSECRANS & STUDEBAKER, Norwalk. GORDON STRAIT (5563-24211, Ext. 2011). UN 3-8147. 12-5  
 (Zone 7)  
 WESTERN & 182ND ST., Gardena. JOHN L. BROWN (5587-22916, Ext. 1381). DA 3-2052. 12-7  
 NORMANDIE & 220TH ST., Torrance. (Can take 2 riders.) C. L. FITZJARRELL (5507-14710, Ext. 526). FA 8-2433. 12-7

NARBONNE & LOMITA BLVD., Lomita. J. LESLIE WALLING (5504-22456, Ext. 1209). DA 6-4379. 12-8  
 LINCOLN & OCEAN PK. BLVD., Santa Monica. (Can take 4 riders.) EARL A. HATFIELD (3410-52305, Ext. 742). EX 6-9656. 12-12

(Zone 13)  
 WILSHIRE & VETERAN, West Los Angeles. (Car pool considered.) B. C. BARTON (7721-26676, Ext. 2206). GR 7-1539. 12-13

7:30 a.m. — 4:15 p.m.

(Zone 4)  
 IMPERIAL HWY. & TELEGRAPH RD., Whittier. (Car pool considered.) G. J. MARINELLO (5980-35825, Ext. 2600). OX 3-7384. 13-4  
 ROSECRANS & VALLEY VIEW, La Mirada. (Car pool desired.) DICK TREMBLY (5910-45359, Ext. 2614). 13-4  
 (Zone 6)  
 PALO VERDE & WILLOW, Long Beach. (Car pool desired.) JOHN R. SNYDER (8910-29465, Ext. 694). HA 9-3768. 13-4  
 CONANT & PALO VERDE, Long Beach. (Car pool desired.) KARLA DIXON (9542-51034, Ext. 2228). HA 9-7732. 13-4  
 (Zone 8)  
 ARLINGTON & 174TH ST., Torrance. R. A. LEWIS (5970-27095, Ext. 2180). DA 3-6896. 13-8

(Zone 14)  
 CRENSHAW & SLAUSON, Los Angeles. SIDNEY R. OLDIS (5144-14408, Ext. 1946). AX 3-4449. 13-14

8:00 a.m. — 4:45 p.m.

(Zone 1)  
 SANTA MONICA & WESTERN, Hollywood. H. GREER (3312-53657, Ext. 2775). HO 4-6094. 15-1  
 CRENSHAW & 108TH ST., Inglewood. (Car pool considered.) M. P. SODEIKA (3546-53825, Ext. 1516). OR 2-7174. 15-1  
 (Zone 5)  
 LAMPSON & WEST ST., Garden Grove. (Car pool considered.) ANN RYAN (3142-32958, Ext. 2022). 15-5  
 NORMANDIE & 134TH ST., Gardena. (Can pick up in Hollywood.) GERTRUDE ACKERMAN (3313-12913, Ext. 716). DA 3-1580. 15-5  
 (Zone 9)  
 SILVER SPUR & PALOS VERDES, Rolling Hills. (Grand View Palos Verdes, Tract; car pool desired.) ROLLIN STURGEON (3839-47242, Ext. 1592). FR 8-4345. 15-14

(Zone 14)  
 BURBANK BLVD. & COLD WATER CANYON, North Hollywood. (Car pool desired.) LEONARD LEVENTHAL (3010-53908, Ext. 1266). PO 1-2109. 15-14

(Continued on page 4)





## Bomb, Rocket Rack Passes AF Shakedown

Good things come in small packages.

Northrop's new Practice Bomb and Rocket Carrier has received very favorable customer reaction.

Carrying its bombs and rockets—four 25-pound practice bombs and two 2.75-inch rockets—the rack was put through complete supersonic paces by century series aircraft at Nellis Air Force Base, Nevada, during the past few months.

When the results of the desert flights were in and evaluated, the carrier received high rating for reliability, usefulness, and effectiveness.

Information on its capabilities was recommended by the USAF Fighter Weapons School for widest possible dissemination throughout Air Force agencies whose missions would be made more efficient by its use.

Developed through the Associated Systems and Subcontracts section of Military Relations, Russ Bowditch, manager, the practice bomb rack concept was designed primarily to aid the Air Force training program.

The carrier weighs approximately 100 pounds empty; is a quick change accessory. It can be mounted on either a 30-inch, or a 14-inch suspension system. It can be placed on the aircraft's pylons, loaded, and armed in a matter of minutes.

Accessibility is a prominent feature, with hinged doors providing "wide open spaces" for rocket tube, bomb shackle, and wiring system inspection.

Bomb ejection is by powder charge which enables the aircraft, even at supersonic speeds, to launch its bombs straight and true without tumbling or search.

Design was started in April of this year. Tests, including flight, were complete on November 1.

Activation of the program was through Air Force Flying Training, Randolph Air Force Base, Texas. Flight evaluation and coordination was by the Air Force Armament Center.

Aside from excellent large numbers sales potential, the development of the Practice Bomb and Rocket Carrier is a fine example of efficient programming. Design, manufacture, and sales effort were accomplished on one of the smallest budgets ever recorded at Northrop.

Schedule—from the first line on paper in April to customer test completion in October, seven months—is also record making.

Complete information on the carrier may be obtained by calling Military Relations, station 1303.

**AWAY—** Propelled by powder charge. New Northrop practice bomb and rocket carrier demonstrates at Nellis Air Force Base during supersonic flight. Bombs release without tumble or search. Note clear cut horizontal position of bomb immediately after ejection. See story at left.



**PRACTICE CARRIER** may be attached to the airplane and loaded with its weapons in a matter of minutes. Bomb hanging process is shown here. Safety factor is outstanding—no electrical connections until carrier is armed.

## CLASSIFIED AD DEADLINE CHANGED, ONE ARTICLE ONLY IS BBSF LIMIT

Northrop News classified ad deadlines have been changed.

Ad requirements for the BBSF section have also been changed.

New deadlines are:

Buy, Barter, Sell or Free

## Palladium

(Continued from page 1)

present to win and those unable to attend may turn in their stubs to any Personnel Activities office, or in a special box at the TV display.

Norcraft party-goers who wish to dine at the Palladium prior to the dance can make reservations on a first come, first served basis at any Personnel Activities office. Dinner may be ordered from the regular Palladium menu. Dinner is served from 7:30 and dancing starts at 9 p.m.

## More GMW

### RIDES OFFERED

3:45 p.m. — 12:15 a.m.

(Zone 5)

BELLFLOWER & SPRING, Long Beach. K. N. ANDERSEN (5520-22097, Ext. 2646). HA 1-3508. 16-5

(Zone 6)

COMPTON BLVD. & WESTERN, Gardena. J. A. BROWN (5501-47393, Ext. 2200). DA 4-4541. 16-6

LONG BEACH BLVD. & 10TH ST., Long Beach. J. L. WYATT (5587-23066, Ext. 2295). HE 6-7302. 16-6

3:45 p.m. — 1:15 a.m.

(Zone 6)

LONG BEACH BLVD. & 10TH ST., Long Beach. JAMES L. WYATT (5587-23066, Ext. 2295). HE 6-7302. 17-6

4:45 p.m. — 1:15 a.m.

(Zone 1)

WESTERN & SANTA MONICA, Hollywood. (Can also work 4:15 - 12:45 a.m. shift.) ROBERT W. CHRISTOPHER (3144-53089, Ext. 1848). HO 4-5838. 18-1

(Form 59-308) deadline is shortened to Monday noon following publication date. Ads are now limited to one item per advertiser per issue. Going My Way (Form 59-228) deadline is extended to Thursday noon before publication date.

Changes have been made in the interest of efficiency and due to alterations in publishing schedules. Advertisers must be Norcrafters. Ads will be printed in one issue only. If an ad is to be repeated, another form must be submitted. Ads must be printed or typewritten. Signature of the advertiser is required. Forms are available from department clerks, plant lobbies, Personnel Activities offices, and the Northrop News office, Plant 4, Department 1320, Zone 65.

### RIDES OFFERED

4:45 p.m. — 1:15 a.m.

(Zone 3)

SAN BERNARDINO FREEWAY & MOUNTAIN AVE., Upland. (Car pool or riders wanted.) ARNOLD ZAVITZ (5920-51830, Ext. 1725). YU 2-4296. 18-3

(Zone 5)

OLIVE & ATLANTIC, Compton. (Car pool desired.) ALBERT L. FOOTE (5920-49090, Ext. 1725). NE 1-0843. 18-5

WOODRUFF & DEL AMO, Lakewood. (Room for 4 passengers.) P. H. MAURER (5421-15210, Ext. 1856). TO 6-3349.

(Zone 14)

VAN NUYS AREA. (Via Hollywood Freeway.) RICHARD J. TOWNSEND (5950-43435, Ext. 2488). 18-14

## Radar Eye —

(Continued from page 1)

The radar system makes it possible for the first time for a missile to pick out the reflection from a moving target at low altitude from a mass of signals reflected from ground objects such as hills, buildings and trees.

## Mrs. Clara Newkirk Socials to Cycles

"Where are you from, Mrs. Newkirk?"

"I am from Rockingham, North Carolina. It's not far from Kittyhawk. The industry is all textile around Rockingham. I worked all of my life in the textile mills. I raised my family, worked in the mills. Very busy."

Clara Newkirk is a department clerk in 5238. The News wanted to do a constructive story on recreation and what people do in their spare time. The Newkirks, Clara and Ike, ride motorcycles out into the desert.

Clara is a grandmother.

"What kind of recreation did you have in Rockingham?"

"Mostly church socials. We went to a show once in a while. We went to picnics—the usual type of picnic like American people have everywhere. It was a busy life, but when the war came, something happened to it. The kids were grown up, the boys in the service, and things weren't complete anymore."

"You came to California?"

"Yes, I came out here for a visit. The climate was wonderful, and the man who delivered my trunk was wonderful."

"The man who delivered your trunk?"

"Yes, that was Ike. He worked for the Express company. He's my husband now, and I have never been happier. He weighs 200 pounds and is six feet tall."

"But how about the motorcycles?"

"Our first date he took me riding on his motorcycle. I was scared a little bit, but I had lots of confidence in him."

"Trunk and the first date on the motorcycle started it all?"

"Yes, that's right."

"This business we are building up to seems to be big trouble with a lot of people," said the reporter. "Husbands and wives cannot get together in what they like to do in their time off. Was this a one-way adjustment on your part?"

"No, I go with him on the motorcycle and he goes with me on my Eastern Star work. So it works both ways, you see?"

"I think I do," said the reporter. "More about the motorcycle—would you rather go on the motorcycle or in the car?"

"If it came to a choice between the car and the motorcycle, and we could have only one of them, I would take the motorcycle."

"This is a little hard to understand," said the News reporter. "Most women seem to hate motorcycles and camping out and things like that."

"Usually we go with 30 or 40 people on our trips. Our leader is an older man. He's 72. We pick out a place to go to like Death Valley, or Needles, or Borrego, Colorado River—places like that."

"What equipment do you take?"

"We each take a canteen. We take a coffee pot. We eat out of mess kits—those little GI mess kits with a fork, knife and spoon."

We each have a sleeping bag."

"What kind of food do you take?"

"Bacon, eggs, canned milk, sugar, canned foods of all kinds. Fried chicken sometimes."

"Good idea," said the reporter. "Do you take a flashlight?"

"Yes, we take a flashlight. We have lots of fun at night. We build a campfire, everybody sits around, and we sing western songs. It's just more fun. There is so much natural beauty. There are a million stars in the sky. People in town never see the stars like we see them out there. Sometimes the wind blows, but even that's all right. We have taken longer trips too. We went to Zion once."

"I am beginning to understand," said the News reporter. "But it seems to me that for women who usually lead such sheltered lives—the transition to a motorcycle from a living room is a pretty big one."

"There is more to it than that," she said. "There is the attitude."

"The attitude?"

"Yes, the woman's attitude. For the man it is easy. Most spare-time activities are designed for men. Bowling. Baseball. Hunting. Fishing. All men's sports. The only things that seem to fit women are shows, dancing. Women are limited in their recreation."

"And this brings us to attitude."

"People must be able to do things together. If there is a secret to happiness, this is it. A woman must learn to look beyond her own sphere. She must be able to see things from a man's viewpoint."

"Even to boxing and baseball on TV?"

"Even to boxing and baseball on TV."

"The test of your theories—are you happy?"

"Oh yes, I am very happy."

"One more question, Mrs. Newkirk—how do you like your job at Northrop?"

"I love my job at Northrop. It's the best job I ever had in my life. It's fun to work at Northrop."

"How did you happen to come to work for Northrop in the first place? Was that an accident?"

"Oh, no. Northrop was recommended to me by one of my friends."

"That's a fine thing to say about a company. Thank you. In behalf of the company I thank you."

She smiled.

The interview was over. Mrs. Newkirk went back to her department. She was a woman with poise and dignity and a rare mental completeness.

The story of a grandmother who likes to ride a motorcycle had reached way beyond wind and sun and speed, and had brought forth a philosophy of happiness for her sex.

Would this philosophy work for others?

Each reader will know, concluded the News reporter.

**Share the Ride**  
See GMW, Page 3



## Ray Geer Clocked at 60 MPH For Win in Salton Sea Race

The "Mr. Bristol" did it! With Northrop's Ray Geer at the helm, the speedy new craft covered the 90-mile Salton Sea course at 59.7 miles per hour to win first place in the unlimited class.

Three other Norcrafters piloted the course for honors in the first annual Stock Runabout Marathon held November 10. Jim Fairchild copped first place in the single engine cabin cruiser class. Bill Higbee placed third in the S class, single motor com-

### DEADLINE NEARS FOR ANNUAL YULE BOWL TOURNEY

Bowlers are reminded that entries are now being accepted for the annual Christmas Tournament to be held at Roselanes December 27, 28 and 29. Deadline for entries is November 29.

Complete rules and regulations for the ABC sanctioned tourney are available at the Personnel Activities offices, all facilities.

petition. Bernie Keel came in fourth in the single engine 35 horsepower class.

Calm water on the day of the race provided ideal conditions for the "Mr. Bristol" which clocked 60 mph. Powered by twin Mark 55's, the "Mr. Bristol's" only close contestor was a Yellow Jacket powered by twin Mark 75 engines.

First place was won by Ray Geer despite gas tank trouble on the last leg of the second lap. His boat was dead in the water for 18 minutes before resuming the race. On the last lap, he set an unofficial world record for the class covering 18 miles in 18 minutes and five seconds.

Ray will attempt to make it official in a December competition race at Desert Shores of Salton Sea. Race is sponsored by the United Stock Runabout Association and competition is open to members only. Applications can be addressed to the USRA, Box 124, Hawthorne, California.

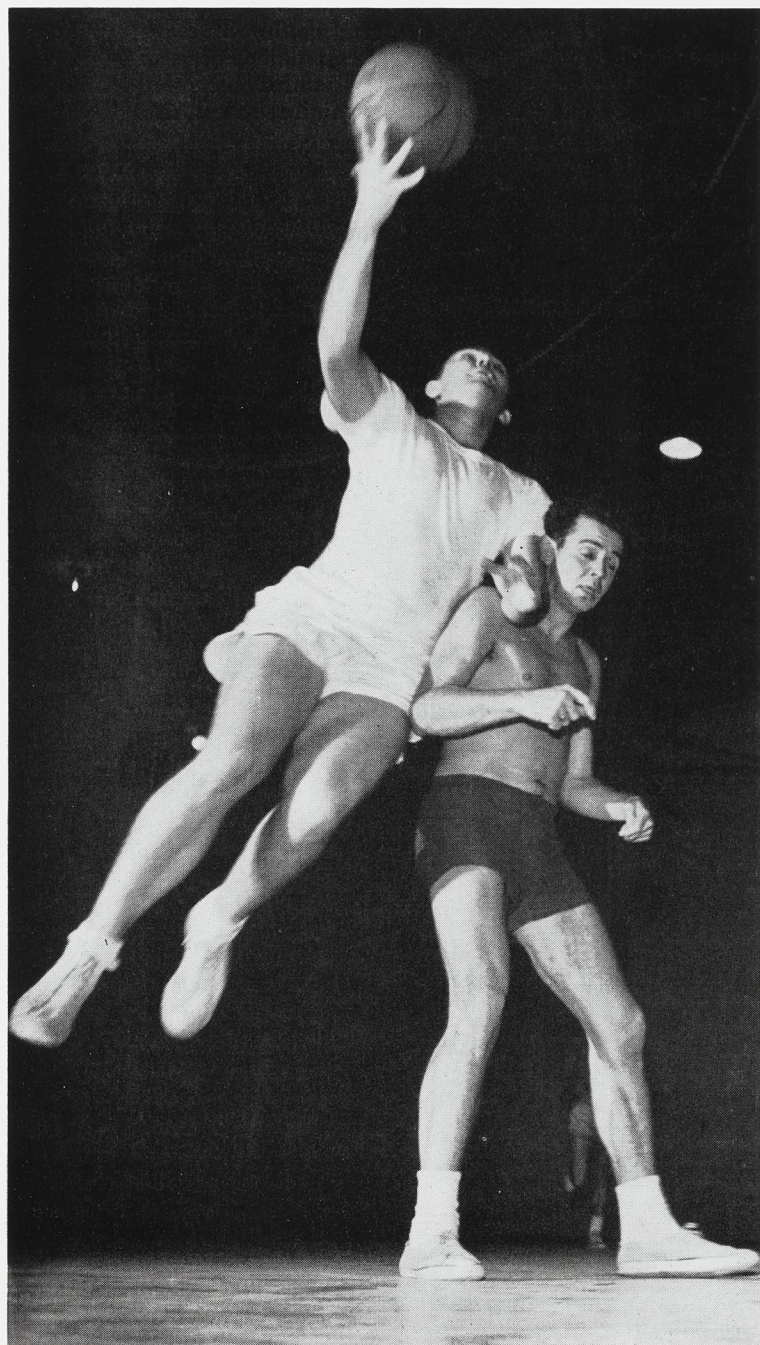
## Second Radio Club to Form

Night shift amateur radio hobbyists are invited to attend a formation meeting for a new radio club. The gathering will take place at 1:30 p.m. next Wednesday, November 27, at the NRC Clubhouse.

Plans will be adopted for or-

ganizing a Night Shift Radio Club. The NRC amateur station W6VPZ will be made available for use by the new group. Norcrafters planning to attend the first meeting are requested to contact Personnel Activities Office, Plant I, extension 2784, before 6 p.m.

## Basketball Ballet



**BIG COLOR TELEVISION SET**—Palladium Party door prize for some lucky Norcrafter is eyed by NRC Special Events Committee and Santa Claus. Front, Helen Swift and Ted White. Top, Gene Boggess, Santa (Paul Hollman), Ron Wiggins, and Fred Brandt. Absent for photo was Doc Cook. See story on page one for complete details.

### NRC SURF FISHING MEETINGS FEATURE MOVIES OF EVENTS

Northrop surf fishers have adopted a new idea for their regular monthly meetings. Moving pictures taken during field meets of the NRC Surf Fishing Club are shown for the members.

Also part of the expanded activities, reports Commissioner John Pawlicki, are instructional sessions on the knack of fishing and the attendance of guest speakers for the regular monthly meetings. See Good Time Table, below, for meeting dates.

**MID-AIR COLLISION** occurs as Carl Backers of the "Wonder Boys" leaps for a basket. Caught unaware is

Myron Baker of Department 3410. "Wonder Boys" topped 3410 by 42 to 22 score in league opener.

## PA&S Office Consolidates Services in Plant I Area

Services offered to Norcrafters through the Personnel Activities Office at Plant III will be available at the main Personnel Activities Office, Plant I, effective Monday, November 25. This is the date that the Plant III office will be closed until further notice.

For the convenience of Plant III area Norcrafters who wish to transact Credit Union, Personnel Services and NRC business at the Plant I office, temporary parking is provided in front of the new cafeteria.

Hours of service are—Personnel Services from 11 a.m. to 12:55 p.m. and 3 p.m. to 6 p.m., Monday through Friday. Credit Union is open from 7:30 a.m. to 6 p.m., Monday and Tuesday;

from 7:30 a.m. to 4:45 p.m., Wednesday through Friday.

### SPORTS CAR CLUB SCHEDULES RALLY FOR NOVEMBER 24

Rallymaster Ward Brannon announced that the November Sports Car Club event will be a "Dilly Dally Alley" rally on Sunday, November 24.

First cars pull out from parking lot H at 120th and Crenshaw at 8:31 a.m. for a three hour, 20 minute, 30 second course. Requirement for the contest includes \$1.50 entry fee, a navigator, watch or clock and map of central and western Los Angeles. Any type car is welcome.

## NRC Good Time Table for December

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days)** Jack Duer  
Meet Wednesday, 6:30 p.m. Archery classes now in session.

**ART CLUB (days)** Milton Maldonado  
Meet in Annex every Thursday, 7 p.m. Models furnished by NRC. Newly formed sculpture class meets every Wednesday, 7:30 p.m.

**BIBLE STUDY**, Roy Stahl  
Plant I—Daily, 11:30-12:15, Training Conf. Room, Tool Design Bldg., 11-11:45, 5587 Conf. Room.  
Plant II—Mon. & Thurs., 12:15-1 p.m., Conf. Room 2.  
Plant III—Daily, 12:15-1 p.m., Conf. Room 5.  
Torrance—Tues. & Thurs., 11:30-12:15, Bldg. K2 Conf. Room.

**BOAT CLUB**, Steve Sabo  
Meet 1st Wednesday of month, 7:30. Night shift meets 3rd Thursday of month, 2:30 p.m. Water Ski Club Days meets 3rd Thurs., 7:30 p.m.

**BOWLING (days)** Lloyd Forstrom  
Christmas Bowling Tournament—Dec. 27, 28 and 29. Entries now available P. A.

**BOY SCOUTS**, Stan Morris  
Sea Scouts, Intermediate, Cub Scouts. All Norcrafter boys welcome.

**CAMERA CLUB (days)**, Steve Marsteller  
Meet 1st & 3rd Wednesday.

**CAMERA CLUB (nights)**, Gene Beck  
Meet 1st and 3rd Sat. of month, 8:15 p.m.

**FISHING (day and night)**  
Register of fish for NRC awards with cards available at Personnel Activities.

**GEM & MINERAL CLUB (days)**  
Raymond Cole  
Mineralogy class now in session. Meet every Thursday, 7 to 9.

**GEM & MINERAL CLUB (nights)**  
Victor Lincoln  
Meet 1st and 3rd Wed. of month, 1:30 p.m.

**GOLF (days)**, Charles Pinegar  
**GOLF (nights)**, Leo Baker  
Christmas Golf Tournament—Dec. 26 and 27. Entries available P. A.

**GUN CLUB (days)**, Robert Kalkofen  
Meet 1st Tues. of month, 7:30 p.m., Clubhouse. Meet 3rd Tues. of month at Centinela Pistol Range.

**MIXED CHORUS**, Bill Porter  
Meet every Tues., 7:30 p.m. All Norcrafters welcome. Watch for date of Christmas program.

**MODEL CRAFT CLUB**, Jerry Greasby  
Meeting 1st Monday of month.

**MODEL RAILROAD**, Jack Wilson  
Meeting every Thursday evening from 7 to 10 p.m. in Annex. Visitors welcome.

**PHILATELIC**, Robert Van Rensselaer  
Meet 2nd and 4th Mondays, 7 p.m.

**RADIO CLUB**, Phil Kramer  
Meet last Thursday of month in Annex, 7:30 p.m. Radio Code Class meets every Wednesday evening, 7:30 p.m. NRC's Station is W6VPZ.

**RADIO CLUB (nights)**, Merwin McGrew  
Initial meeting 1:30 p.m. Wednesday, November 27.

**SKEET CLUB**, Harold Bowers  
Meet every other Saturday at Long Beach Dominguez Gun Club on Artesia Blvd., 10:30 a.m. December 7 and 21.

**SKIN DIVING (days)**, Ralph Gonzales  
Meet 3rd Monday of month at 7:30 p.m.

**SKIN DIVING (nights)**, Lillian Kemble  
Meet 3rd Wednesday of month, 1 p.m.

**SPORTS CAR CLUB**, Bill Hanna  
Meet 2nd Thursday of month, 7:30 p.m.

**SQUARE DANCING**, Roy Jackson  
Beginners class starting 2nd, 3rd, 4th, and 5th Sundays, Gardena Barn, 15016 Daphne St., Gardena, 3 to 6 p.m.—Regular Sessions 1st, 2nd and 4th Sundays at 8 p.m.

**SURF FISHING**, John Pawlicki  
Meet 1st Tuesday of month, 7:30 p.m.

**TOASTMASTERS 212 (days)**, John Langdon  
Meet every Thursday evening, 6:30 p.m., "The Cockatoo".

**TOASTMASTERS (days)**, Howard Cornelius  
Meet every Tuesday evening, 6:15 p.m., "Kims".

**TOASTMASTERS (nights)**, Ray Grish  
Meet every Thursday, 12:30 p.m., "Gondolier", corner of Imperial Highway and Prairie.

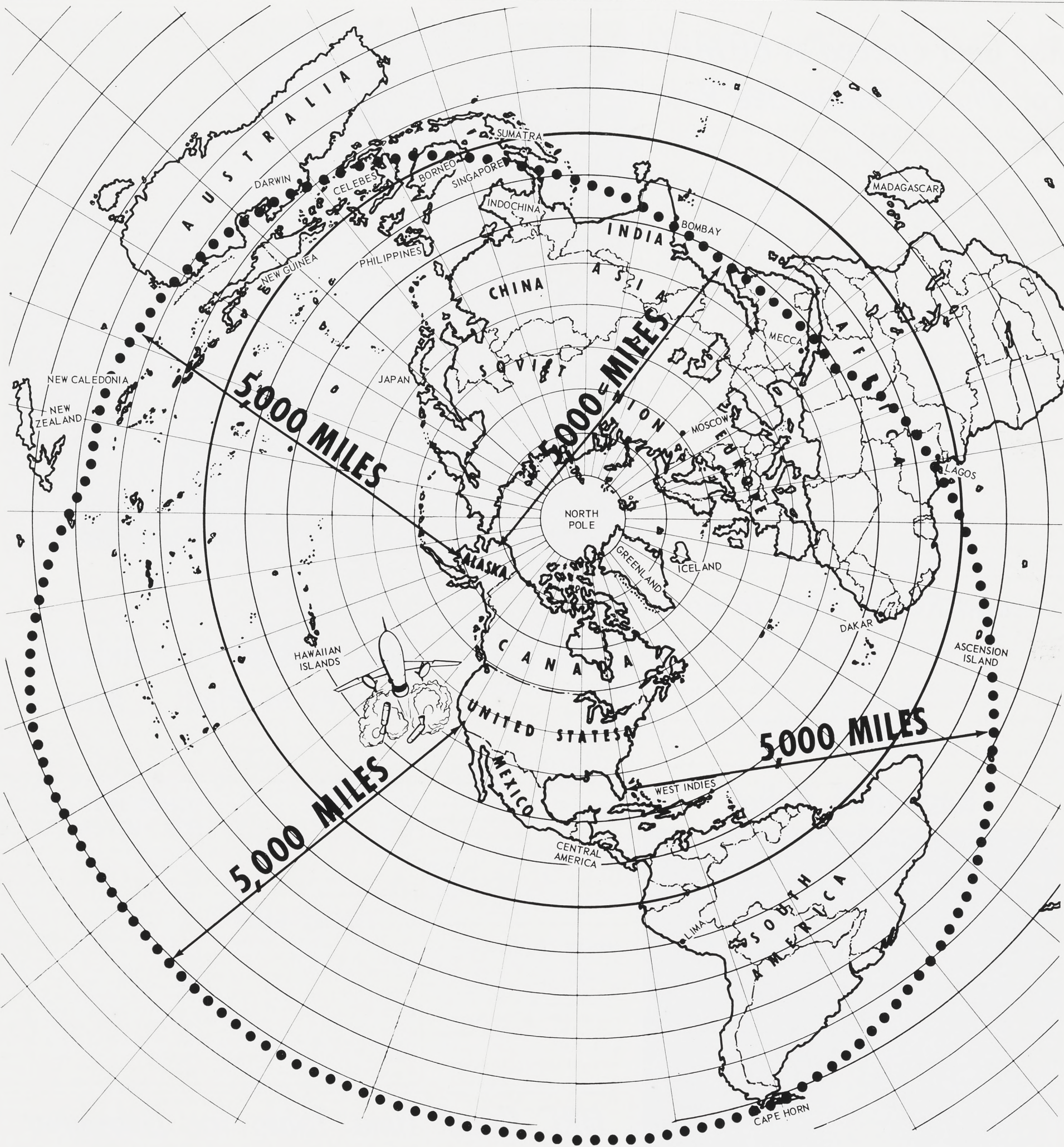
### FOR THE LADIES

**BOWLING (days)**, Joan Sittauer  
**BOWLING (nights)**, Mary Minnaugh  
Christmas Bowling Tournament, Dec. 27, 28 and 29.

**GIRL SCOUTS**, Helen Maupin  
Mariners, Intermediates, Brownies. All Norcrafter girls welcome.

**TOASTMISTRESS**, Vicki White  
Meet in NRC Clubhouse Board Room 1st and 3rd Thursday, 7 p.m.





**GLOBAL RANGE OF THE SNARK—** From the borders of United States and Alaska, the Snark can range the world over. Australia, New Zealand, South Africa and the Antarctic are the only land masses out of reach. Ascension Island, end of the Air Force testing range, is

shown at three o'clock. Equator is heavy circle halfway out. Painstaking research, long months of meticulous testing, mark the success of the SM-62. Reliability standards must be second to none. There is no man aboard to correct malfunctions. Snark makes its long journey alone.

## Snark Has Global Range —

(Continued from page 1)

siderable savings to the Air Force.

Prior to the October 31st launch, the Snark's "orders" directing it to the pre-selected target, were fed into the missile's self-contained and nonjammable guidance system. From launch to target, the flight was completely automatic.

Previously, Snark flights had been limited by the existing length of the range and no complete demonstration was possible.

In autumn, 1957, the final station on the range at Ascension Island, near the coast of Africa, was completed and the entire 5,000 mile sea test lane was opened. The Snark was the first missile to use the full length of the range. The Snark is operationally capable of an additional 1000 miles over and above the present range length but geography and cost do not permit extension to fully accommodate the Snark. Tests of the final range

length are not considered necessary.

To obtain all possible data, lengthy preparation preceded the flight. Six picket ships were in place dotting the sea, down range from the last land station in the West Indies, and completing a chain of communications over the full 5,000 mile course.

The Snark was zero launched from its mobile launcher at 5:21 p.m., E.S.T., in the presence of a group of military leaders and Northrop scientists and techni-

cians. Boosted into flight by giant solid rocket boosters, it bored into the sky.

It was deliberately launched off course to prove the capability of the well-tested Northrop-designed guidance system to bring it into correct line for the target. In the very early stages of the flight it passed beyond the cognizance range of the Air Force Missile Station at Cape Canaveral. A special electronic beacon in the Snark enabled alerted stations down range in the West Indies to pick up the missile as it passed over.

In continuing trajectory it arched over the picket ships. Radio reports to Cape Canaveral

continually verified its "on course" position. Finally, in a terminal strike, precisely monitored by the new instrumented station at Ascension Island, it delivered its warhead precisely as programmed, marking a new milestone in global Air Force capability.

U. S. Air Force airmen are now being trained at the Northrop Division to operate the intercontinental missiles for the Strategic Air Command.

When these missiles are placed in their operational sites along our Northern tier of states, they will present a real deterrent posture to the enemies of the free Western world.



**FIRST T-38 FUSELAGE**—Now out of jig, first T-38 trainer unit is being prepared for supersonic track tests at Edwards. Ejection seats will be fired to measure forces, displacement and clearances. Here Virgil Nolan, left, and Dave Large, check ejection rail tolerances with pilot seat. Assembly work is progressing on other T-38 test units.

## NORTHROP

# NEWS BRIEFS

**SNARK HEADLINES**—First the 5000-mile range news and now it is revealed that all-Air Force team has fired the Snark. Fired at the Cape by the 6555th Guided Missile Squadron, Major Ray W. Cullen commanding, the Snark quickly reached altitude, entered the attack course and stayed on it—just like an everyday affair. When the mission was accomplished and over, the Snark came back, was landed at Cocoa. Flight pointed up high reliability factor, designed and built-in staunchness.

**BOARD OF DIRECTORS** meeting on 18 November was highlighted by the avalanche of publicity following President Eisenhower's announcement that the Snark had demonstrated true intercontinental ability. A television and radio tape carrying top-flight newscaster commentaries on the SM-62 was played. President Whitley C. Collins outlined to the board Northrop Snark objectives with the Department of Defense—feature of which is constant high level company communications with the Pentagon to make every phase of Snark program available to the customer on fast notice. Scheduled for Pentagon visits this week and next week are John Alison, George Douglas, General Whitehead, and T. V. Jones. Northrop vice-president and general manager Robert R. Miller reported to the Board on company backlog—both firm and under negotiation. He also reported on the company cost reduction program. The Northrop Board represents top executives in practically all fields basic to world economy—steel, oil, consumer goods, aircraft, banking, finance, plus public relations and law.

**SHAREHOLDERS ANNUAL MEETING**—10 December, will be held for the first time in the new product display building just west of Plant 4. Entire T-38 trainer mock-up will be displayed at this meeting as feature of company product previews and reviews.

**QUARTERLY DIVIDEND**—Northrop board of directors, at 18 November meeting voted 40¢ quarterly dividend to stockholders of record 29 November. Dividend will be paid 14 December.

**LAST TWO SCORPIONS** near flight door—End of mod program signals end of production and modification on the F-89. First F-89 flight was in 1948—since that time Norcrafters have seen over sixteen hundred, including fix and mod rework airplanes, leave the plant for Air Force service. Last Scorpion will leave Hawthorne plant about the middle of December; will depart Palmdale early in March. Scorpion manufacturing efficiency has been good all the way, but "Let's watch out for 'tail high' costs," says Vice-president, Manufacturing, R. R. Nolan. End of contracts are always a headache, always tough to handle—shortages, squawks, new production schedules, new airplanes swirling around the old timer. Indications are that the '89 will be completed below schedule costs, would mean a nice bonus to Uncle Sam and taxpayers.

**INVENTORY REDUCTION**—fast flow time equals smaller inventories equals cost reduction. Vice-president Nolan reports good success in inventory reduction goal as outlined in the 28 August 1957 issue of the Northrop News. "We can't take chances with production schedules being affected by shortages," states Mr. Nolan, "however, there are many items of aircraft 'consumer goods' that are in long supply and there is no point in warehousing large amounts. We can get them any time we want them. If an item is on short supply, this of course, requires long range buying procedures. Materiel must keep constant research eye on the markets. Benefits are mounting up." . . . Actual figures now show that non-productive stores inventory is down 25 per cent or \$491,100 worth.

**BURDEN RATE**—(indirect hours, service departments, et al) for quarter ending 31 October shows better ratio to direct costs than end of fiscal year 31 July. Accomplishment is significant. Last fiscal year showing was made under easier set of circumstances.

**GIANT BRAIN**—Received this week by Computing and Data Handling Center, the first of its new line of giant, high-speed electronic computers, the IBM type seven-o-four, now being installed in the special air-conditioned room at the Computing Center in the new engineering building. Seven-o-four will go into operation later this month, according to Lee Ohlinger, chief, Computing and Data Handling Services. It will be used to solve engineering and scientific problems, not only for engineering, but for all of the corporate divisions that require. Will also process engineering and flight test data, can prepare control tape for the large, numerically-controlled milling machines at Northrop, and will be available for test programs in Northrop's long-range integration of company-wide data processing. Later, seven-o-four will be superseded by the IBM type seven-o-nine computer and data handler capable of full-scale integrated data processing in addition to engineering computations and data reduction.



## Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif. Wednesday, December 4, 1957

## High Military Ceremony to be Held For First Snark Missile Graduates

Formal military graduation exercises will be conducted at Northrop for the first historic class of Air Force "Missileers".

A high ranking Air Force official will deliver the keynote address at the December 17 ceremonies marking the graduation of 106 Snark missile specialists.

Lieutenant Colonel Richard Beck, commander of the first Snark squadron, is expected to attend. The exercises will be conducted at 10 a.m. in front of the missile pre-launch test facility.

The graduating class consists of officers and airmen of the Strategic Air Command and Air Training Command, and civilian employees of the Air Materiel Command. They will be completing specialized courses on the Snark taught by the Northrop Customer Relations department.

An Air Force band and color guard will be on hand for the graduation exercises. Following the ceremony at

Northrop, the military personnel will take up duties with the first intercontinental guided missile squadron recently activated. The squadron will be manned by 500 officers and airmen.

## Publisher to Address M-C Next Meeting

Wayne W. Parrish, distinguished president and publisher of American Aviation publications, will be guest speaker at the Management Club December meeting, it was announced by Al Kendall, club president.

A highly respected aviation writer, Mr. Parrish will discuss many of the questions facing the aircraft industry based on his intimate knowledge of administration policy, long-range plans, and the missile race.

He established American Aviation Magazine in 1937 and followed it in 1939 with American Aviation Daily. Other publications launched since then include American Aviation World-Wide Directory, Official Airline Guide, Air Traffic News, Airports, and Who's Who in World Aviation.

His early journalistic career included reporting for the New York Herald Tribune, Chicago Herald and Examiner, and the (See M-C MEETING, Page 2)

## NRC Annual Party Set--December 7

Two name bands, dining, dancing, and a special color television set door prize award are on the program for the gala NRC "Private Party" at the Hollywood Palladium, Saturday, December 7.

This annual party for all Norcrafters will get the holiday season off to a merry start. Tickets are on sale now through all department clerks at one dollar each, including tax.

Sammy Weiss and his orchestra will provide the "big band" style of music for which the Palladium is famous. Also starred are Red Nichols and his Five Pennies.

With each ticket to the party, Norcrafters receive an opportunity to win a new color television set. Winner will be drawn at the party, but it will not be necessary to attend in order to win. To be eligible, ticket holders must fill out their name and address on the attached stub which can be deposited at the Pal-

(See PALLADIUM, Page 2)

## CHRISTMAS TREE RULES

For Norcrafters who will have Christmas trees in their departments—

Flameproofed trees only.

Flameproofed decorations.

(Flameproofing certificates required).

Disconnect Christmas tree lights at close of shifts.

Take down decorations Christmas Eve—Maintenance folk will pick up trees for disposal.



## Norcrafters Commended On Indian Springs Work

Norcrafters who worked hard, long hours with their F-89s for the success of the first atomic rocket firing at Indian Springs, Nevada, last summer have been highly complimented by Air Force officials.

The firing, dubbed John Shot by the Air Force, was featured in the Northrop News by Aireporter, July 31, 1957. Title of the story was "Fury in the Sky".

Air Force letters are printed below:

OPERATION PLUMBBOB  
Mercury, Nevada

3 September 1957

TO: Mr. H. R. Pink  
Chief of Experimental Flight Test  
Northrop Aircraft  
Hawthorne, California

It is my desire to commend the members of your organization for the superior manner in which they installed, maintained the aircraft instrumentation, performed data reduction, and assisted the WADC Project Officers in accomplishing a successful mission at the Nevada Test Site.

The project aircraft successfully participated in fourteen events and obtained excellent data from each participation. I feel that this record is self evident of the proficient manner in which these personnel performed their functions, during Operation Plumbbob.

The devotion to duty, cooperativeness and efficiency of each person in performance of his specific duty under extremely difficult situations reflects great credit upon the Flight Test Department of Northrop Aircraft.

It has been a great pleasure and, indeed, very gratifying to be associated with these personnel.

(Signed)  
GEORGE STALK  
Captain, USAF  
Project Officer Project 5.5

OPERATION PLUMBBOB  
Mercury, Nevada

3 September 1957

TO: Mr. D. D. Warner  
Chief of Structures  
Northrop Aircraft  
Hawthorne, California

It is my desire to highly commend the following members of your organization for the superior manner in which they established and conducted the theoretical positioning unit of the Project 5.5 F-89 aircraft during Operation Plumbbob:

Mr. Chester M. Kantorski, Mr. John R. Clem and Mr. Robert W. White.

No rapid means of calculating a theoretical position for the F-89 was available. Consequently, each position required laborious techniques involving considerable time and effort. Since, in many instances the time interval between events was very short, a theoretical position was accurately obtained only through the diligent and conscientious effort of these engineering personnel.

Their devotion to duty, cooperativeness, and efficiency in conducting these functions while under extremely difficult situations reflects great credit to the Engineering Department of Northrop Aircraft, Incorporated.

It has been a great pleasure and, indeed, very gratifying to be associated with these personnel.

(Signed)  
GEORGE STALK  
Captain, USAF  
Project Officer Project 5.5



**NEVADA ATOMIC** tests for which Norcrafters were complimented pave the way—. At Yuma's Vincent AFB, Wing Commander Col. Robert P. Baldwin, 4750th Air Defense Squadron, looks over team of F-89J and MB-1 practice atomic warhead rocket. Colonel was first AF man to fire the rocket from F-89J outside of Indian Springs. His mission ushered in tactics and techniques training for routine squadron use—defense of America by airborne A bombs.

## T-38 Undergoes Successful First Flight Via Variable Stability Aircraft

Advanced design characteristics of Northrop's new T-38 supersonic trainer have undergone successful test flights. The flights were made by Northrop chief experimental test pilot Lew Nelson at the Ames Aeronautical Laboratory, Moffett Field, California.

Nelson flew a variable stability airplane specially equipped to simulate various predicted flight characteristics of an aircraft still under development.

In five flights, low speed landing approaches and landing turns were made, according to Nelson. He reported that the tests confirmed the predicted handling qualities of the T-38 configuration.

"Even under the extreme conditions that the airplane need be expected to operate, the T-38 configuration maintained good lateral and directional control," he said.

The tests were conducted to verify flight data collected through extensive wind tunnel testing of the T-38 design.

Nelson explained how the variable stability airplane was made to simulate T-38 performance. He said, "Coded data compiled from wind tunnel tests were fed into 'black boxes' in the test aircraft. The 'black boxes' in turn controlled servo-mechanisms which varied the stability characteristics to conform to those of the T-38 design being tested."

He said control surfaces of the test plane were varied to induce sideslip, rolling, yawing, and even rough air. "These were servo-applied rudder and aileron deflections independent of the pilot's control motions and allowed expected flight characteristics of the T-38 to be evaluated."

Returning from Moffett Field, Nelson was enthusiastic in his appraisal of the world's first supersonic basic trainer airplane. He called the T-38 "a pilot's dream—the kind of aircraft pilots like to think about flying."

## Northrop Research Provides New Data on Aluminum Alloy

A supersonic fighter is poised for takeoff at one of America's far northern outposts of defense. Jet engines roar to full power. In a flash the craft is airborne. Climbing. Faster-than-sound.

Performances such as this, subject supersonic aircraft to tremendous increases in temperature, from sub-zero cold to blast-furnace hot. Called aerodynamic heating, rise in temperature is caused by air friction.

With the problem of aerodynamic heating as well as extreme jet engine heating comes an important need for information about the properties of metals used in aircraft structures. How much can certain metals take? How can aircraft be designed to withstand drastic temperature changes?

Realization of the need for new information was the basis for Northrop research on the tensile properties of aluminum alloys, conducted for the Wright Air Development Center.

Discussion of the research program and findings were presented recently to the Second World Metallurgical Congress in Chicago by Northrop Metallurgist Chuck Avery, who was also an American conferee to the Congress. He said that the Northrop tests resulted in design data for predicting the tensile strengths of aluminum alloys subjected to complex temperature-time exposure histories. He pointed out that the findings will help permit improved design of aircraft required to operate at elevated temperatures.

"To test aircraft metallic materials under all of the complex and changing combinations of temperature, time and stress would be time consuming and economically impractical," Avery

stated. "However, it was possible to sample through the range of temperature, time and stress expected during supersonic flights and from the tests performed deduce generalizations applicable to all combinations of the variable factors."

Working with Avery on the research project and co-author of the paper was Bob Fortney, senior engineer, Structures Research Section of Structures department. Avery is a senior engineer, Metallurgical Section of materials and Process Engineering.

## Palladium

(Continued from Page 1)  
ladium or at the TV display in the cafeteria.

Party-goers may dine at the Palladium prior to the dance. Reservations for dinner are being taken by the Personnel Activities office on a first come, first served basis. Dinner will be served from 7:30 with dancing at 9 p.m.

## Top Northrop Scientists Spark Student Interest

Russian launching of two earth satellites brought to the fore the "most critical problem" facing Americans, the problem of Soviet advances over the U.S. in training scientists and engineers.

But many months before Russian Sputniks started circling the globe, Northrop had taken steps to do its share to help solve the critical need. It had established participation with six other aircraft companies in an Industry-Education program for Los Angeles City Schools.

Latest effort, initiated in February of this year, was the agreement to provide company scientists and engineers for lectures and demonstrations in Los Angeles high school science and math classes.

George Douglas, vice-president, Engineering, refers to the program as one of "youth motivation". He pointed out that it is industry's obligation to help motivate youth toward careers in science and engineering.

"If we expect our young people to seek rewarding careers in these fields, the initial step to-

ward motivation must be made in the secondary schools," he asserted.

In organizing the lecture-demonstration program, school officials assigned Alexander Hamilton High School to Northrop. First step by Northrop was review of science and math text books used at the school. This was done so that lectures and demonstrations would be integrated with the school's curriculum.

Norcrafters selected for the lectures and demonstrations are Lee Ohlinger on math and atomic energy, Howard Childers on chemistry and physics, Al Binsacca on metallurgy, physics and chemistry, and Bill Steffen on chemistry and plastics. Each will make two or three lectures per semester and by the end of this year will have made six lectures.

A second phase of the program includes presentations to interested school youth groups. Recently, the "Future Engineers of America" at John Marshall High School received two such presentations on the Northrop Snark and aircraft design.

# Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 6

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# An Expression of Holiday Spirit



**A BRIGHTER CHRISTMAS**—First Norcrafters to request "Adopted Families" were departments in Engineering Data. Marie Tully, right foreground, reads case history of needy family for selection by the departments. From left, Mary Neimeyer, 3146; Helen Jo Paul, 3144; Jean Lewis, 3142; Shirley Royce, 3148; Buck Nichols, 3142; Marion Lagatree, 3145, and Alice Stewart, 3143 (hidden). "Adopted Family" program is completely voluntary Northrop tradition to brighten the holiday for the less fortunate.

## A Good Invention Is Also a Classic

"If you have a problem—invent your way out of it—"

Harold Michael, supervisor of Preliminary Design's component group, Engineering, made it sound so simple. He made it sound disarmingly simple.

Harold Michael is a big man. He had arrived three minutes late from another meeting. He looked like an outdoors man. He is one of Northrop's top inventors with five patents in his name, and two pending. This is out of 17 submitted—a very high patent batting average.

His patents include a detachable hinge for Scorpion engine doors, a wing tip fuel tank attachment means, and a very clever engine duct coupling that allows for expansion and contraction, does not leak and withstands high heat.

"There is one thing, however," he continued. "Before you can invent yourself out of a problem—make sure you have a problem. Lots of times we think we have problems when actually it is our own inability to strike true to the core of the situation. We haven't understood the assignment, or perhaps other people haven't understood."

"Let's examine this in terms of an assignment then," said the News reporter.

"There are two kinds of mental reactions that people undergo when they are undertaking an assignment—that seems to be a tough one.

"They will ricochet off the job and find themselves doing something else; or

"They will work right to the bitter end getting the job done.

"Of course, getting the assigned job done is the important thing, however, in his eagerness to invent a new solution, a man shouldn't be foolish. If the work required to develop his brain child is worth more than the improvement it would make, why go on with it?"

"A man should evaluate?"

"Yes, he should."

"Would you tell us about your background?"

"It's in the American tradition, I guess," he said.

"Let's hear it."

"I am a farmboy," said Harold. "My dad had a 900-acre wheat farm in northeastern Colorado. Most people think that in Colorado the Rockies are all around you. We couldn't even see the Rockies from our farm."

"Did you show any inventive inclinations when you were a boy that might have indicated something?"

"Well, I drove the tractors," he said, "and I kept them in repair. For one thing, I didn't have any patience with horses."

"But you didn't stay on the farm?"

"This was during the depression in the '30s," he said. "I left the farm and went to Cripple Creek after I was out of high school a few years. There wasn't any money in farming at home. I had to go."

"In Cripple Creek you went to work in the mines?"

"Yes."

"What kind of a job?"

"I was a mucker and trammer."

And he went on to explain that a mucker is a man who shovels broken ore into cars, and a trammer is a man who shoves the cars to the winze area so the ore can be hoisted out.

"I didn't work there long. Only five months. School started and I hitchhiked to the University of Colorado and I was there for four years."

"Did you put yourself through school entirely, or did someone help you?"

"During the last year my folks were able to let me have \$300. Other than that, I earned all the money myself at odd jobs of one kind or another. I don't mind saying that the money pressure was so great that I never knew from one week to the next whether I would still be in school or not. But I finally made it. I graduated in four years, without interruptions. Then I went to Lockheed in 1940 and then I came to Northrop. I have been here 11

years."

"By the way, what kind of mine was that in Cripple Creek you worked in?"

"A gold mine."

And he told about the genesis of the ore and the geology of the mine in Cripple Creek.

The earth had cracked a hundred million years ago and the gold in the form of tellurides came up through the cracks and settled out to make men and America rich. The mine was an expression of a science—mining engineering. And science is basic to all progress, Harold said.

"Let's talk about your inventions now," said the News reporter. "Would you tell us what was the first thing you ever invented?"

"The first several things I invented, I didn't invent. The things I thought needed inventing had already been invented. There is very little that is new under the sun. An inventive mind must be a curious mind, and if you are alert, you will see that people keep stumbling over the same things, and you will think 'there is something I can improve on!' Be careful here, because you will find that with the hundreds of people who stumble there will be a small per cent who stop to remedy the situation."

"And about the business of there being very little new in the world."

"The older we get the more we see and understand this."

"There are two things every man would like to do," said the News reporter. "One is to invent something, the other is to write the story of his or someone else's life. If a man is to satisfy his ambition for creating things, what does he have to have?"

"We are products of our environment," Harold said. "A job like mine, where we are constantly asked for solutions to problems, is fertile soil for inventive ambition. You see, the type of job you are in is quite important. There are two situations. One is where a man truly comes up with a unique solution to a problem that has hindered progress. Two, and this is the kind of thing that every inventor hopes to be lucky enough to participate in, a brand new field—like the satellites, where you can be a pio-



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 6)

NORMANDIE OR WESTERN & 166TH ST., Gardena. ROBERT MOLINA (5504-52808, Ext. 2645). DA 4-0673. 2-6

(Zone 14)

MAGNOLIA BLVD. & WHITTSET, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14

7:30 a.m. — 4:15 p.m.

(Zone 5)

KNOTT & CRESCENT AVE., Buena Park. (Members wanted for car pool; have parking pass.) JEAN CARR (5120-50362, Ext. 1406). JA 7-8745. 3-5

GARDEN GROVE BLVD. & HIGHWAY 39, Westminster. (Evening ride acceptable.) HOWARD EISENBERG (7511-51255, Ext. 2694). OR 4-5102. 3-5

(Zone 9)

PALOS VERDES DR. E. & EASTFIELD GATE, Rolling Hills. (Car pool considered.) JOHN G. McCUE (3410-31500, Ext. 556). FR 7-1184. 3-9

LARCH & 156TH, Lawndale. JUELE PIZUTO (5120-43990, Ext. 705). OS 5-8619. 3-9

(Zone 10)

RINDGE LANE & MANHATTAN BEACH BLVD., Redondo Beach. SHARON ANDREWS (1232-49335, Ext. 1740). FR 6-2502. 3-10

(Zone 13)

SEPULVEDA & CULVER BLVD., Culver City. E. D. PEDEN (8930-15664, Ext. 2773). 3-13

(Zone 14)

CRENSHAW & FLORENCE, Los Angeles. PINKA KANEHL (1232-53304, Ext. 1740). 3-14

W. SANTA BARBARA & RODEO RD., Los Angeles. (Want 2 riders, or will join car pool.) A. M. DYCKOFF (8930-51214, Ext. 1386). AX 4-9182. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 1)

SANTA MONICA & WESTERN, Hollywood. H. GREER (3312-53657, Ext. 2775). HO 4-6094. 5-1

(Zone 2)

WILKIE & W. 119TH ST., Inglewood. KATHRYN MCCARTHY (3145-53174, Ext. 1436). PL 4-5068. 5-2

SANTA BARBARA & HILL ST., Los Angeles. (Car pool considered.) ROBERT FUKUNAGA (3542-52689, Ext. 710). AD 2-9210. 5-2

(Zone 5)

MARTHA ANN DR. & BOSTONIAN DR., Los Alamitos. (Car pool desired.) PHILIP J. D'ANNA (3546-52334, Ext. 719). FR 2-1006. 5-5

(Zone 9)

HAWTHORNE BLVD. & 156TH ST., Lawndale. (Car pool desired.) DALE NIXON (3475-52395, Ext. 509). OS 5-0183. 5-9

PRAIRIE AVE. & 174TH ST., Torrance. RITA HARRIS (5406-16878, Ext. 2220). FR 4-4941. 5-9

(Zone 14)

OLYMPIC & FAIRFAX, Los Angeles. (Join established car pool, drive 1 week out of 6, have parking pass.) H. L. FISHER (3542-50302, Ext. 710). WE 8-8325. 5-14

4:45 p.m. — 1:15 a.m.

(Zone 5)

LA PALMA & KNOTT AVE., Buena Park. (Car pool considered.) R. GELLER (5353-53839, Ext. 2347). LA 2-7676. 8-5

(Zone 6)

MAGNOLIA & PACIFIC COAST HWY., Long Beach. C. B. ROGERS (5566-51812, Ext. 1589). HE 7-3874. 8-6

neer and almost everything you do constitutes an invention—and this has a lot to do with inventive success. Luck enters into it. You must be in the right place at the right time.

"How about the stories where scientists forget to empty test tubes, and the next morning wonderful things have happened in the lab?"

"That kind of luck is strictly for the movies," he said. "Successful inventions are ten per cent inspiration and ninety per cent perspiration."

"Give us some more," said the News reporter.

"You must have ego," he said. "People with ego love to accomplish things. Also, an education helps."

"What do you recommend in education?" said the News reporter.

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 6)

VICTORIA & AVALON, Gardena. MARGARET OSBORNE (5507-19097, Ext. 526). DA 9-7122. 12-6

(Zone 14)

MAGNOLIA BLVD. & WHITTSET, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 12-14

7:30 a.m. — 4:15 p.m.

(Zone 5)

KNOTT & CRESCENT AVE., Buena Park. (Members wanted for car pool; have parking pass.) JEAN CARR (5120-50362, Ext. 1406). JA 7-8745. 13-5

PALOS VERDES DR. E. & EASTFIELD GATE, Rolling Hills. (Car pool considered.) JOHN G. McCUE (3410-31500, Ext. 556). FR 7-1184. 13-9

(Zone 10)

HWY. 101 & REDONDO BEACH BLVD., Hermosa Beach. C. F. MONIZ (5143-43550, Ext. 663). 13-10

HERMOSA AVE. & 19TH ST., Hermosa Beach. (Via Pier, Redondo & Prairie.) R. E. BOWMAN (4700-31320, Ext. 1985). FR 2-1236. 13-10

(Zone 14)

W. SANTA BARBARA & RODEO RD., Los Angeles. (Want 2 riders, or will join car pool.) A. M. DYCKOFF (8930-51214, Ext. 1386). AX 4-9182. 13-14

8:00 a.m. — 4:45 p.m.

(Zone 1)

SANTA MONICA & WESTERN, Hollywood. H. GREER (3312-53657, Ext. 2775). HO 4-6094. 15-1

(Zone 2)

SANTA BARBARA & HILL ST., Los Angeles. (Car pool considered.) ROBERT FUKUNAGA (3542-52689, Ext. 710). AD 2-9210. 15-2

(Zone 3)

HOOVER & CENTURY, Los Angeles. WM. WEBSTER (3812-12638, Ext. 581). PL 6-0536. 15-3

(Zone 5)

MARTHA ANN DR. & BOSTONIAN DR., Los Alamitos. (Car pool desired.) PHILIP J. D'ANNA (3546-52334, Ext. 719). FR 2-1006. 15-5

(Zone 9)

HAWTHORNE BLVD. & 156TH ST., Lawndale. (Car pool desired.) DALE NIXON (3475-52395, Ext. 509). OS 5-0183. 15-9

(Zone 14)

OLYMPIC & FAIRFAX, Los Angeles. (Join established car pool, drive 1 week out of 6, have parking pass.) H. L. FISHER (3542-50302, Ext. 710). WE 8-8325. 15-14

3:45 p.m. — 12:15 a.m.

(Zone 5)

BELLFLOWER & WILLOW, Long Beach. K. N. ANDERSEN (5520-22097, Ext. 1760). HA 1-3508. 16-5

4:45 p.m. — 1:15 a.m.

(Zone 5)

LA PALMA & KNOTT AVE., Buena Park. (Car pool considered.) R. GELLER (5353-53839, Ext. 2347). LA 2-7676. 18-5

### Miscellaneous — Split Shift

(Zone 8)

COMPTON BLVD. & YUKON, Gardena. (Mariposa, hours 7:15 a.m.-4 p.m.) CAROL KEGLOVICH (6002-42988, Ext. 3-691). OS 5-0674. 20-8

### SHARE THE RIDE

"The basic sciences—physics and math. With those two you can go anywhere."

"How about cultural things?"

"The cultural is much neglected in the engineering schools. In addition to physics and math, a man should study philosophy and psychology. Philosophy will put the bee in his bonnet to change things, and psychology will make a human being out of him. And he should have a sanctuary where he can work undisturbed."

"Has your career been a satisfying one?"

"Yes—yes, it has. Creative work—new things. It's the best."

"Any other advice?"

"Yes—an inventor should make his gadget or method, or whatever it is, simple. Uncomplicated. A good invention is a classic thing. And all classic things are simple."



# Northrop Scientist on Army Committee

Herbert K. Weiss, Northrop chief of weapon systems analysis, has accepted an appointment as member of the scientific advisory committee for the U.S. Army's Combat Development Experimentation Center. First committee meeting was held yesterday.

He was one of six eminent

scientists who comprise the committee, according to Brig. Gen. Frederick W. Gibb, commander of the Center at Ford Ord, California.

General Gibb said the Center's mission is to experiment with and evaluate Army's concepts, organizations, doctrine, and pro-

cedures for future combat. The scientific advisory committee will advise the Army on the scientific aspects of organizational and procedural evaluation.

Aim is to determine the best combination of firepower, tactics, logistics, command, mobility, control, and combat surveillance.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday following publication.

### FOR SALE

T-BIRD, '57, low mileage, best offer. PA 8-1284.  
REFRIGERATOR, 9 cu. ft. Servel, \$50. OR 1-4608.  
DODGE, 1951 Coronet 4-door, \$290. SY 5-4069.  
HOUSE, 3-bedroom, 2 baths, GI resale, Southwood Tract. FR 6-1251.  
MOTORCYCLE, 1948 Harley-Davidson, 74 F.H., new saddle bags, seat, tires, \$325. TO 6-9966.  
MOTORSCOOTER, 1956 Zundapp. FR 9-1160.  
BUICK, 1954 Roadmaster, power equipped, new tires, \$1500. PL 8-4390.  
MOVIE PROJECTOR, 8 mm. Regent Deluxe, Bell & Howell, forward, reverse, still projection, gear drive, no belts, guaranteed, case, \$139. RE 1-8067.  
CABIN CRUISER, 20', 2 bunks, heads, Cris-Craft engine, glassed hull, tandem trailer, \$2000. DA 4-1721.  
BABY BASSINETTE, plastic liner, air foam mattress, \$10. NE 5-4370.  
BICYCLE, boy's 26" lightweight, 3-speed, hand brake, generator, lights, carrier, \$27. OR 4-0455.  
CAR RADIO, push button, never used, ant., 6 or 12 volt, \$30. OR 1-1325.  
FORD, 1956 Victoria, power steering. OS 6-0307.  
ANTIQUE TELEPHONES, 2, genuine Kelloq rural wall-type, hardware, cranks, \$10 ea. FR 4-0305, 5-9 p.m.  
BUICK, 1936 Special, \$75. DA 6-2124.  
BICYCLE, girl's 26", \$15. PL 2-6379.  
DODGE, 1950 4-door, Gyromatic. must sell, entering Army. FR 6-3884.  
CHEVROLET, 1956 Bel Air Nomad station wagon, power brakes, steering, Powerglide, lowered, headers, full tarp, power pack, extras. OR 4-5560.  
VW MICROBUS, 1957 Transporter, extras. LU 5-6960.  
JR. DINING ROOM SET, blonde, solid ash, \$60. PL 6-7750.  
HOUSE, 4-bedroom, unrestricted, carpet, disposal, fruit trees, 1 loan, 50'x220' lot, near plant, \$10,500. PL 7-2719.  
RIFLE, F.N. Mauser 30.06, Canjar set triager, 2 1/2-8 Baugh & Lomb scope, B & L mount, sling, pad, cases, \$215. PL 6-4642.  
BOOKS, Childcraft, 14 volumes, for ages 2-10. TO 2-1291.  
CORVETTE, 1954, tonneau cover, convertible top, Powerglide, \$1949. FR 9-9043, 5:30-7:15 p.m.  
MG, 1955, wire wheels, extras. EA 2-5722.  
STOLE, Stone Martin, 3 skins, \$125. OS 6-2615.  
BICYCLE, boy's 20". \$15. FR 2-9737.  
IRONER, Kenmore deluxe, 3 speeds, temp. & knee control, \$90. OW 7-0080.  
BOILER, Steamaster, 3 1/2 hp., \$100. DA 9-4065.  
FURNITURE, 3-pc. Early American sectional, rustic easy chair, ottoman, \$50. OR 8-8347.  
VACUUM CLEANER, Rex Air, water filter type, \$120. PL 2-7991.  
LUGGAGE TRAILER, 2-wheel, \$45. OR 3-8403.  
TAPE RECORDER, V-M model 711, binocular hi-fi, \$150. OS 5-9076.  
TABLE, drop leaf, blonde, fawn oak, seats 8, \$35. DA 4-2956.  
PIANO, baby grand Thiebus, with bench, \$150. CI 3-3075.  
DEEPFREEZE, 61 Orley. DA 6-2532.  
HI-FI SET, tailored cabinet, FM tuner, 20 watt amp., 4-speed record changer, 12" speaker in corner enclosure, \$175. FR 9-1031.  
RIFLE, 6.5 mm. Austrian Steyr, barrel shortened, crowned, stock shortened, Lyman ramp front sight, reworked bolt, floor plate, receiver tapped, military ammo, empty cases, mounted sling, \$40. NE 8-4677.  
OLDSMOBILE, 1950 88 4-door, \$450. FR 2-1006.  
OUTBOARD MOTOR, Martin 45, 2-wheel carrier, \$50. Box 606.  
RELAXICISOR, \$100. FR 5-8926.  
DOOR CHARM, good luck type, \$1.95. OR 7-7785.

### FOR SALE

HOUSE, 2-bedroom, R-2 lot, N. Inglewood near Centinella Park, \$10,750, \$1500 down. PL 5-0752, 10 a.m.-2:30. A  
HAMBURGER STAND, retiring, ideal business for independent couple. KI 3-6487.  
PROPERTY, 10 acres raw land near Rosamond & U.S. Hwy. 6, \$4850, \$485 down, \$45 mo. WH 2-0674.  
ACCORDION, Wuritzer, \$125. DA 4-7855.  
PLYMOUTH, 1952 Cranbrook 4-door. FR 4-8732.  
NASH, 1951 Statesman 2-door sedan, overdrive, new tires, \$195. FR 5-4642.  
MONK'S CLOTH, neutral color, 13 1/2 yd. roll, \$12. FR 5-8804.  
RADIO-PHONO COMBINATION, Magnavox chairside, Philippine mahogany, \$25. FR 6-6020.  
RADIO-PHONO, RCA comb., blonde console, auto. changer, 78 rpm., \$10. OS 5-4736.  
TURNING LATHE, small metal, 4 1/2" swing, 7 1/2" between centers, precision, \$37. TO 6-7521.  
CORVETTE, 1956, extras. TE 4-8672.  
HOUSE, 2-bedroom, Westchester, attached garage, 6 yrs. old, disposal, thermostat, wired 220, fenced, near shopping, schools, Loyola. FR 7-2983.  
CHEVROLET, 1949 2-door, \$200. GR 3-5824.  
MODEL R.R. EQUIPMENT, H.O. DA 4-8061.  
BABY BUGGY, \$15. DA 4-4750.  
PUPPIES, German Shepherd and Collie mixed, 14 weeks old, have had shots, wormed, \$10. NE 5-5487.  
LINCOLN, 1933 Classic V-12, original, \$395. FR 2-6913.  
HOUSE TRAILER, 1953 35' Terry Manor. NE 5-3470.  
FORD, 1949 2-door, 1955 Chevrolet V-8 engine, \$250. Box 604.  
DRESSING TABLE, painted white, yellow plastic skirt, \$5. PL 6-5220.  
TENT, 16'x16' pyramidal. DA 4-4541.  
TABLES, portable, steel and aluminum, 6'x2 1/2', \$45. FR 5-0419.  
STUDEBAKER, 1947 club coupe, overdrive, \$150. OS 6-9567.  
AIR RIFLE, 22 cal., \$20. OS 6-6390.  
ENCYCLOPEDIAS, Colliers Post-War, 20 vols., 6 vols. Famous Short Stories, 10 vols. Junior Classics, \$150. DA 4-7323.  
CAMERA, 35 mm. Bolsey B2, case, flash, \$30. FR 2-4426.  
SHOPSMITH, Mark V and jointer, \$220. OR 4-2408.  
RANGE, 1956 Kenmore gas, clock, grid, used 5 months, \$75. DA 3-6050.  
TRAIN SET, Lionel freight, .027 gauge, curved and straight tracks, bridge, tower, crossing, bumpers, crossover track, switches, cars, \$45. DA 4-0649.  
BUICK, 1956 Century hardtop, \$1750. OS 6-8064.  
CHEVROLET, 1953 4-door. FR 7-1745.  
HEATER, gas, console type, 27" high, auto. pilot, \$15. PL 8-7138.  
CHEVROLET, 1949 convertible, new top, seat covers, paint, \$295. FR 6-3524.  
PONTIAC, 1955 Starchief Catalina hardtop, \$1350. LE 9-0964.  
AIRPLANE, 1/5 interest in Cessna 140, at Torrance Airport, \$500. FR 8-2145.  
SOFA & CHAIR, matching, also sofa chair, \$30. Box 602.  
RENAULT, 1957, 4-door sedan, \$400 for \$700 equity, take over payments, \$44 month. Box 609.  
LOT, 63'x133' Moonridge Estates, Big Bear Lake, \$600 cash, take over payments \$20 mo., bal. \$591. EX 1-2569.  
FURNITURE, mod. 3-pc. sectional, desk, chair, lamp, coffee table. FR 6-5626.  
CAMERA, Voigtlander Bessa, Voigtar 1:4.5 lens, Compur shutter, 2 1/4"x3 1/4". AX 4-1625.  
FORD, 1940 Deluxe 2-door sedan, original paint, upholstery, new tires, rebuilt engine, \$175. FR 4-0080.  
BOSTON TERRIERS, AKC, ready 1 week before Christmas. OS 5-9695.  
PUPPIES, Dachshund, ready for Christmas, \$5. OS 6-0048.

### FOR SALE

VACUUM CLEANER, Hoover, attachments, \$40. OS 6-5033.  
VOLKSWAGEN, 1953 Sunroof, \$995. GA 3-1363.  
SCINTILLATOR, model 117, by Precision Instrument Co. PL 4-7861.  
BOAT, 12', Glen L. design, glassed deck and interior zolitonized, trailer, Mercury Mark 20, all controls, \$500. OR 7-3275.  
COUCH & CHAIR, green frieze, \$45. FR 4-2605.  
FURNITURE, 3-piece sectional, modern, \$95. DA 4-2472.  
TAPE RECORDER, Webcor 2-speed, \$80. OR 7-6325.  
ELECTRIC CAR, 1956 Laher "Hillbilly," lights, windshield top, battery charger, no vehicle or driver's license required, \$550 DA 9-6894.  
CADILLAC, 1956 Coupe De Ville, full power, \$3900. FR 3-6981.  
CONTOUR CHAIR, red naugahyde, \$45. DA 4-0373.  
RANGE, gas, high broiler, oven, \$50. OR 8-2057.  
BED, 30" roll-a-way, \$12. GR 7-1539.  
CHEVROLET, 1955 4-door Bel Air, Powerglide, power brakes, steering, \$1650. OS 6-2768.  
ORGAN, Consonette spinet, full bass pedals, HE 6-7302.  
STUDEBAKER, 1934, \$50. NE 1-6828.  
CHEVROLET, 1953 2-door sedan, 210, \$650. DA 9-7480.  
RADIO, Hallicrafter 4-band, AC-DC, portable, telescope antenna, 25 watt output, \$60. PO 1-9269.  
NASH, 1951, Hydra-Matic, \$250. OS 5-0674.  
BEDROOM SUITE, mahogany, vanity, bench, chest, \$40. PL 1-4859.  
NASH, 1953 Rambler station wagon, safety belts, overdrive, new seat covers, brakes relined, \$595. FR 5-3672.  
SECTIONAL, 3-pc., modern, \$95. DA 4-2472.  
PLYMOUTH, 1932 convertible, hydraulic brakes, rumble seat, 4-cyl., \$85. OR 7-8895.  
HOUSE, 3-bedroom, 1 1/2 baths, near schools, shopping, Lakewood, \$15,900. TO 6-9938.  
POWER MOWER, Foley 21", 2 1/2 hp., extra blade, aluminum housing, ball bearing, rubber tires, 1 year old, \$65. AX 1-8776.  
SPORTSMAN TOP, Frank Fry, aluminum, fits 1/2 ton pick-up, \$150. JE 1-1586.  
FORD, 1950 6 cyl. 2-door, \$375. OR 4-9419.  
TAPE RECORDER, Ampex 601. PL 2-7953.  
TV, 21" mahogany console, 2 years old, \$75. DA 3-5648.  
TIRE CHAINS, 7.10x15 or 8.00x14, reinforced bar type, never used, \$15 pair. PA 1-8492.  
OLDSMOBILE, 1955 2-door hardtop, Hydra-Matic, power steering, brakes, \$1795. VE 8-6095.  
TIRES, 7.60x15 Firestone Deluxe Champion tubeless white walls. AX 4-2194.  
BICYCLE, boy's 26" Schwinn, \$17.50. LO 6-1798.  
WASHER, GE, fully automatic, \$40. DA 4-4777.  
DRAWING TABLE, 40"x52", used 6 mo., steel stool w/back, \$65. Box 614.  
SKI BOOTS, Reiker, size 12 1/2, \$25. AX 5-1183.  
BUICK, 1950 Super hardtop, Dynaflo, \$450. OR 4-8156.  
GAS HEATER, portable, Kenmore, 17,000 b.t.u., connector, \$7. PO 3-5577.  
BOOKS, Childcraft, 15 editions, \$50. OS 5-2422.  
TV, 21" Hoffman table model, \$75. Box 607.  
BEDROOM SET, blonde limed oak, bookcase headboard, night stands, dresser, matching desk, chair, TO 6-2696.  
MG, 1953 TD, 1000 miles on motor overhaul, \$1195. DA 9-3962.  
REFRIGERATOR, Coldspot, \$50. OS 5-7203.  
DRAFTING MACHINE, Bruning, \$50. Box 601.  
HI-FI, 1957 portable, 4-speed, used 1 week, \$75. EA 2-1714.  
TRAIN SET, Lionel 5 car, engine, tender, freight, track, switches, accessories, 4'x8 board. FR 4-5512, before 3:30 p.m.  
MG, 1955 TF 1500, \$1600, \$500 down, \$61 for 18 months, no interest. KE 8-9415.  
GAS LOGS, STAND, \$10. DA 3-3282.  
HOLLYWOOD BED, mattress, box spring, w/stand, \$40. DA 6-7844.  
PIANO, Baldwin Studio, small size, \$200. FR 6-1367.  
GYM SET, extra large, sturdy, 3 swings, teeter alide, \$20. FR 4-4941.

### FOR SALE

BOAT, 16' Glenwood, bait tank, preservers, lights, trailer, \$230. FR 9-1980.  
MANIFOLD, Edelbrock triple, progressive linkage, carburetors, filters, fuel block, \$120. Box 610.  
BED, 3/4 roll-away, mattress, \$20. DA 3-5449.  
HOUSE, 3-bedroom, 1 1/2 baths, built-in stove, oven, carpet, drapes, near Pacific Coast Hwy. & Crenshaw. GI resale, \$18,750, \$3000 down. DA 6-1154.  
FORD, 1956 Fairlane 4-door, power steering, brakes, new tires, \$1695. AX 1-3973.  
CAMERA, Argus C3, 35 mm., flash, case, PL 7-3774.  
GUN, Colt Woodsman .22 cal. auto. target model, holster, \$45. FR 8-2648.  
RIFLE, .22 semi-auto., sling, 4X telescope sight, \$30. FR 5-8804.  
T-BIRD, 1955 convertible, power equipment, \$2295. OR 4-2580.  
DOUBLE GARAGE DOOR, wood, hardware, \$30. OS 6-5518.  
PONTIAC, 1953 Chieftan Catalina, power steering, autronic eye, \$900. PL 4-4292.  
HOUSE, 4-bedroom, 2 baths, block wall, double garage, near schools, markets, Los Altos, Long Beach, \$2000 down. HA 1-3508.  
STOVE, Pan American, \$40. Box 603.  
ENGLISH FORD, 1954 Zephyr 4-door sedan, \$500. OS 5-8233.  
HOUSE, 3-bedroom, Hawthorne, near school, \$11,950, \$2950 down, \$80 month. OS 5-3878.  
RIFLE, Marlin 336A 30-30, case, shoulder strap, holes drilled for scope, \$65. OS 5-1494.  
FORD, 1957 4-door hardtop, Fairlane 500, power brakes, windows, steering, seats, \$2495. WE 5-6208.  
CAMPER, aluminum, 1/2 ton, \$175. FR 2-0149.  
BOATS, 22' inboard cabin cruiser, trailer, 13' outboard, TE 4-4064.  
WASHER, auto. Kenmore, 1 year old, \$120. DA 9-5788.  
POWER MOWER, 21" gas, EX 1-5964.  
ENGINE, full race 1948 Merc flathead, 3/4x1/4 Winfield cam, 10' clutch and flywheel, balanced, \$110. FR 9-1333.  
MOVIE CAMERA, Bell & Howell 252, 8 mm., case, telephoto, wide angle lens, \$65. PL 4-9711.  
SHOE SKATES, boy's black Chicago, size 7, \$10. OR 2-4489.  
SKIN DIVERS EQUIPMENT, Scott hydro-pak lung, pressure and depth gauge, other, \$150. Box 612.  
BIKE, boy's 26", \$25. OR 1-3373.  
STOVE, apt. size, \$30. FR 6-3600.  
TABLES, 2 mahogany step end, leather tops, w/2 hand painted table lamps. PL 4-3814.  
REFRIGERATOR, Coldspot, old but runs good, \$22.50. FR 4-7720.  
PORSCHE, 1955 Super Speedster, 1500 cc., \$2600, \$1800 can be financed. FR 4-2614.  
DINETTE SET, Walter of Wabash, blonde, 6 chairs, marproof, \$75. OR 2-7325.  
BICYCLE, man's Schwinn, can be exchanged for girl's model, \$45. TE 3-4191.  
TAPE RECORDER, 1957 Webcor, deluxe hi-fi, 3-speaker, case, \$150. FR 2-8019.  
OLDSMOBILE, 1951 98, Hydra-Matic, electric windows, new tires. AX 3-8644.  
POWER SAW, Delta radial, 9" blade, used only for testing. \$185. NE 1-8858.  
MG, 1952, \$1100. FR 9-3634.  
MODEL TRAIN, Lionel, mounted on 4'x8' table, electric switches, transformers, extras, \$50. TO 1-3734.  
JAGUAR, 1952 XK RO roadster, w/hardtop, extras. FR 9-3128.  
AUSTIN, 1952 4-door sedan. TE 2-4052.  
SILVERWARE, 2-place settings, 3 extra pieces, Damask Rose sterling, never used, \$50. OS 5-0039.  
WAGON WHEELS, \$5 - \$10. WI 7-1548.  
BEDROOM SUITE, blonde, twin beds, night stand, chest, dresser, bench, springs, mattresses. DA 3-4355.  
RECORD PLAYER, Columbia 360K 3-speed, Ronette cartridge, mahogany cabinet, \$85. UN 4-0575.  
TV, Hoffman 17" console, just overhauled, mahogany, \$40. EX 8-5201.  
IRONING BOARD, steel, perforated top, pad, silicone cover, \$4. EX 8-4032.  
PIANO, Baldwin spinet, mahogany finish, \$350. FR 2-5140.

### WANTED TO BUY

BOWLING BALL, 9 or 10 lb., for child. PL 5-5288.  
PIANO, used, cash. OS 5-9740.  
TONNEAU COVER, for 1956 Chevrolet Bel Air convertible. GE 1-6747.  
PING PONG TABLE, 2-section folding, by Sears-Roebuck. TO 2-1291.  
MOVIE PROJECTOR, 8 or 16 mm., silent, FR 5-6395.  
DICTIONARY, second hand Funk & Wagnalls College Standard, abridged from F & W new Standard. FR 4-0477.  
EDGER, half mower, in good condition. GA 3-1363.  
BOAT TRAILER, for 14' boat. FR 4-7204.  
ROCKING CHAIR, child's. PL 2-9597.  
SLIDE PROJECTOR, 35 mm., 300 or 500 watt. OR 4-9976.  
SWING SET, 2 swings, alider, slide, attached to swing set or separate, 8 minimum height of slide. PL 6-0015.

### WANTED TO BUY

BIKE, boy's 20". OS 5-2331.  
FOR TRADE  
SIGNAL GENERATOR, Sylvania, trade for FM & AM tuner. OR 7-4781.  
OLDSMOBILE, 1956 hardtop, trade \$1300 equity for equity in 1954 Ford, Ford-O-Matic. DA 9-2076.  
FREE (to be given away)  
PUPPIES, 2, part Chihuahua, 4 weeks old. OS 5-9451.  
KITTENS, 2 male tigers, 1 calico. DA 4-7323.  
DOG, Basset and Cocker, 8 mos., good with children, has all shots. \$60. D  
RENTALS OFFERED  
BEDROOM, in 3-bedroom home, next to bath, semi-private entrance, near aircraft, \$12 week. OS 5-0576.  
APARTMENT, furnished 1-bedroom, near plant, disposal, aarage, adults only, \$85. OS 6-5425.  
DUPLEX, new 2-bedroom, disposal, aarage, \$90. OS 6-1747.  
BUNGALOW, 1 - bedroom. \$60. PL 9-6332.  
APARTMENT, furnished bachelor, no kitchen, new paint, near Northrop, \$60, utilities paid. OS 6-3326.  
APARTMENT, 1-bedroom, unfurnished, duplex, redecorated, aarage, OS 6-3110.  
BEDROOM, twin beds. DA 4-3217.  
HOUSE, unfurnished 3-room, aarage, near Northrop, markets, \$50. PL 6-4748.  
HOUSE, 2-bedroom unfurnished, fenced, aarage, no pets, child O.K., water and trash paid, occupancy Dec. 15, \$87.50. FR 2-8586.  
HOUSE, new unfurnished 1-bedroom, disposal, near Northrop. OR 7-6832.  
APARTMENTS, 1 and 2-bedroom, Torrance, to be completed by Dec. 15, adults only. OS 6-9086.  
APARTMENT, 2-bedroom unfurnished duplex, redecorated, \$87.50. OS 5-1926.  
APARTMENT, 1-bedroom, aarage, sun deck, Manhattan Beach. FR 5-4118.  
HOUSE, for lease, near Northrop, furnished, carpet, redecorated, disposal, fenced. DA 3-2170.  
BACHELOR APARTMENT, furnished, with kitchen. OR 7-3318.  
RENTALS WANTED  
HOUSE OR DUPLEX, unfurnished 2-bedroom, w/yard, aarage. OR 4-4088.  
APARTMENT, 1-bedroom unfurnished, Hawthorne - Inglewood, take occupancy Dec. 14, \$65. OS 6-0675.  
HOUSE OR APARTMENT, 3-bedroom unfurnished, Inglewood - Hawthorne, rent with option to buy. \$100. OS 6-5218.  
HOUSE, 4-bedroom, vicinity Northrop or beach, to \$125. NE 8-7435.  
LOST  
LOST: Parker T-ball pen, black & silver; plastic coin purse, brown, oval. FR 7-1184.  
PERSONALS  
REWARD: For information leading to the recovery of dark green 1951 Mercury club coupe, license GCL-125, Box 613.  
SKIERS WANTED, 2, with auto, have reservations for 3 at Alta, Utah for Dec. 25 through 29. OR 4-9931.  
THANK YOU: Thanks to my friends for the many cards, gifts, and blood donations during my illness. RUBY STARNER.  
RIDERS WANTED, 2, 1 way or round trip to Ft. Wayne, Indiana, leaving L.A. Dec. 13, returning Jan. 7, share expenses. EX 7-3312.  
FOR SALE OR TRADE  
FORD, 1956 Fairlane V-8, Ford-O-Matic, sell or trade for older car. OR 4-9321.  
JAGUAR, 1952, sell or trade for station wagon or sedan. FR 9-3128.  
IRONER, Kenmore deluxe, \$40 or trade for 9'x10' rug or portable typewriter. PL 6-6518.  
GUN, Colt .38 cal. police positive, \$35 or trade for Luqer or Frontier. AX 2-6976.  
BICYCLE, boy's 26", \$15 or trade for 24", FR 2-4492.  
FORD, 1956 custom 2-door, Ford-O-Matic, \$1550. FR 2-4743.  
POLAROID LAND CAMERA, sell or trade for Reflex or 35 mm. RE 3-4836.  
FORD, 1957 Fairlane 500 Victoria, T-Bird engine, Ford-O-Matic, power equipment, \$2450 or 1953-1954 car and take over payments. AX 1-5453.  
TRANSMISSION, 1949 Ford, \$50 or golf set. OR 2-5253.  
RIFLE, Enfield action 25/06 cal., empty cases, stock needs finishing, glass bedded, test fired only, by Mashburn Arms Co., \$65. Box 608.  
CAMERA, Leotex 35, Nekor F1.5 and F2 telephoto lens, \$200. DA 3-2170.  
CAMERA, Bolsey model C, 35 mm., flash, case, twin lens reflex, range finder, depth, field indicator, \$65 or trade for .38 revolver or table saw. OS 6-1888.  
CHRYSLER, 1955 300 Tudor hardtop, power steering, brakes, \$395 down or car of equal value, terms on balance. OR 7-6832.  
PONTIAC, 1957 Star Chief 4-door hardtop, Hydra-Matic, \$2600 or trade for 1950, 1951 plus cash. FR 6-6762.



# Chorus Plans Christmas Programs

The forty-three singing voices of the NRC Mixed Chorus will present a special Christmas program of traditional hymns and carols for all Norcrafters and their friends. Date of the program is December 17 at the NRC Clubhouse, Hawthorne Blvd.

Featuring 45 minutes of choral singing, the 8 p.m. program will

include excerpts from Handel's "The Messiah", "Cantique Noel", "Holy Night", "The Crib", "The Twelfth Night Before Christmas", and others. There will also be special solo renditions by members of the group.

In addition to the holiday program for all Norcrafters, the

NRC Mixed Chorus has accepted invitations to participate in six other programs. On December 11 the Chorus will sing at the McKinley Home for Boys. Performances in the Domiciliary Chapel and the Brentwood Theatre at Sawtelle Veterans Hospital are scheduled for December 15.

The Chorus sings at Daniel Freeman Hospital December 18, at the Los Angeles Orphans Home December 20, at the Redondo Beach Christmas Pageant December 21 and at the Palms Church in Culver City December 22.



**SCOUTING FOR ALL AGES**—Newest unit of the NRC sponsored scouting family is represented by Cub Scouts Steve Wareing and Billy Wilson, right. Representing other units are Sea Explorers Vincent Dipboye and Gene Mitchell, Scouter Steve Pennington, Explorer Gary Amyrauld, Mariner Scout Sandra Joe Starks, Girl Scout Brenda Cook.

## NRC Scouting Groups Offer Youngsters Varied Program

The NRC Scouting family continues to grow, offering a varied program of interesting activities for youths from ages 8 to 18. An open invitation is extended to all interested Norcrafters and their youngsters to participate in the programs.

Six different groups encompassing each age level hold regular meetings and special events, contributing toward development of handicraft skills, sportsmanship, character, and outdoor life.

For information on each of the groups listed below, contact Personnel Activities office, extension 2784, or the scout leader indicated.

Cub Scouts, boys, ages 8 to 11; Grover Ellis, telephone PL 6-6565. Boy Scouts, ages 11 to 14; John Schoeneman, OS 5-4185. Sea Explorer Scouts, boys, ages 14 to 18; Roy Awerkamp, OS 6-0593. Land Explorer Scouts, boys, ages 14 to 18; Tom Skinner, OS 6-5380.

Girl Scouts, ages 11 to 14; Helen Maupin, extension 2784. Mariner Scouts, girls, ages 14 to 18; Sylvia May Ross, NE 8-8631.

Facilities of the NRC Clubhouse on Hawthorne Boulevard are used as meeting quarters for

### SANTA TO ARRIVE AT LAX HOLIDAY PARTY

Norcrafters at the LAX facility will stage a Christmas Party for youngsters on Saturday, December 14, from 1 to 3 p.m. Special program of refreshments and entertainment with Vic Moore as master of ceremonies will be followed by arrival of Santa via helicopter.

Committee planning the annual party include Ira Cravens, Jim Byrd, Chuck Gilbert, George Brittenham, Stan Suter, Dotty Witbeck, and Edna Lankovski.

the scouting units. Field events, including boating, swimming, training, camping, service projects, and social functions, are scheduled regularly. Parents are welcomed to assist in supervising and directing the programs.

The NRC Scouting units will be featured on a special program over radio station KFI, December 8, at 4:30 p.m.

## Winter Chill Doesn't Stop Plans for Skin Dive Event

Despite the winter chill which keeps bathers away from the beach, Northrop skin divers still explore the Pacific floor as evidenced by the two-day dive scheduled at Catalina, December 28 and 29.

Highlight of the meet will be an authentic Hawaiian luau on Saturday with Larry Pasatierno in charge. Events during the dive will include competitive and

### DANCE DATE SET FOR ELECTRICAL

Electrical Engineering department Norcrafters will hold a semi-formal snack dance, Friday, December 6. The affair will be held at the Air Force Officers Club at Long Beach Municipal Airport, from 9 p.m. to 1 a.m.

Frank Martz and his orchestra and vocalist Irene Legere will provide music for the occasion. Price, including snack, is \$1.50. Ample free parking will be provided.

Directions to the club are on the admission tickets, now on sale by department personnel. Tickets may be secured by calling extension 1715 or 565. Electrical personnel are urged to invite friends, also.

## Roselane Ups Trophies for Bowl Tourney

Thirty-five gleaming trophies await winners of the annual NRC Christmas Bowling Tournament to be held December 27, 28 and 29. Four of the trophies have been donated by Roselanes, where the tourney will be held, for men's and women's all-events, men's high scratch series, and women's high scratch series.

"Although high average bowlers generally walk off with most of the trophies," stated bowler Lloyd Forstrom, "all of the doubles events are being split into class A and class B." He said class B will give the lowest average bowler an opportunity to participate.

Tournament schedules will be ready by December 18 and all bowlers entered in the tourney are requested to pick up a copy of the schedule at the Personnel Activities offices by December 24.

Forstrom said that several hundred Norcrafters are signed up to participate in the annual bowling go.

scavenger hunts with trophies.

Lillian Kemble and Ralph Gonzales, commissioners, said that reservations should be in by December 20. Facilities of the NRC Clubhouse on Catalina will be available for the affair.

Northrop Recreation Club

**PALLADIUM**

**"PRIVATE PARTY"**

saturday evening **DEC 7**

---

**TWO GREAT BANDS**

**SAMMY WEISS • RED NICHOLS**

OF THE **JACK BENNY SHOW** AND HIS **FIVE PENNIES**

---

WIN A BEAUTIFUL RCA COLOR TELEVISION SET

\* **DINNER BY RESERVATION**  
CALL ANY PERSONNEL ACTIVITIES OFFICE

\* **ADMISSION \$1.00**  
PER PERSON TAX INCL.

SEE YOUR DEPARTMENT CLERK FOR TICKETS

## Christmas Golf Tourney Open to All Norcrafters

Any season in the Southland is golfing season according to the enthusiasts and Norcrafter golfers are no exception. In addition to already firm arrangements for second and third shift winter

### NORTHROP LADIES DRESS DOLLS FOR NEEDY CHILDREN

"Dress a doll for a needy child" is the theme of the annual NRC Doll Dressing Contest now underway for the Christmas season. All Norcrafter ladies are eligible.

Undressed dolls will be furnished upon request by the Northrop Recreation Club. Contestants may dress the dolls according to their own ideas, materials and handiwork.

Prizes will be awarded for the most beautifully dressed and the most uniquely dressed dolls entered in the Christmas Doll Dressing Contest.

Dolls may be obtained at all Personnel Activities offices, all facilities. Dressed dolls must be returned to the Personnel Activities offices not later than December 13.

Following judging and award of prizes, all entries will be presented at Christmas to young girls who might not otherwise receive a doll.

leagues, plans are now underway for the annual NRC sponsored Christmas golf tournament.

Slated for Western Avenue Golf Course on December 26 and 27, the tourney is open to all Norcrafters, all facilities, with established handicaps.

Chuck Pinegar and Leo Baker, commissioners, stated that there will be NRC trophies for over-all low gross and over-all low net. Merchandise prizes will be awarded to all winners in each flight.

Tee time is 8 a.m.; entry fee is one dollar and green fee is four dollars. Entry blanks are now available at Personnel Activities offices, all facilities. Deadline for entries is December 13.

Second and third shift golfers will be competing for honors in new winter leagues slated at Alondra and Western Avenue courses, depending on players preference. Starting time for league play is 8 a.m. on Mondays and Wednesdays.

### PLANS UNDERWAY TO FORM WOMEN'S BASKETBALL TEAM

All girls interested in a women's basketball league scheduled to start during the latter part of January are invited to a special formative meeting tomorrow evening, 7 p.m. at the NRC Clubhouse.

Uniforms, equipment, a gym, coach and scheduling in the Los Angeles Women's Industrial League will be furnished by NRC. It was announced by Gene Boggess, president. Tentatively, league games are slated for January at Alondra Park. Call Personnel Activities office, extension 2784, for additional details.

### JOHN WALKER BEST HUMOROUS SPEAKER

Two Northrop Toastmasters Club members won honors in a recent Area 7 humorous speech contest. John Walker of Club 212 was judged winner with Len Hauter, Club 1398, runner-up.

As winner of the contest, Walker will represent Area 7 in the district finals slated for January 18. Six clubs are represented in Area 7. They include Northrop 212, Loyola Del Rey, 499, Hawthorne 1246, Norair 1398, North American 2008, Norcrafter 2583.

## Basketball Standings

### NIGHT SHIFT LEAGUE

Team	Won	Lost	Pts.	Opp.
5336	3	0	131	80
5437	2	1	143	108
5561	0	2	72	111
5373	0	2	37	84

### INDIVIDUAL SCORING RACE

Team	Games	Team	Points
Bill Davis	2	5336	30
Fritz Armanta	2	5437	28
Jerry Ott	2	5336	27

### WEDNESDAY SCORPION LEAGUE

Team	Won	Lost	Pts.	Opp.
Boy Wonders	3	0	103	86
5503	2	1	102	66
5563	2	1	143	81
3540	1	2	93	76
3410	1	2	86	108
Terrors	0	3	39	155

### INDIVIDUAL SCORING RACE

Team	Games	Team	Points
Earl Ford	3	5503	39
Don Greco	3	5563	38
Bob Kies	3	Boy Wonders	33

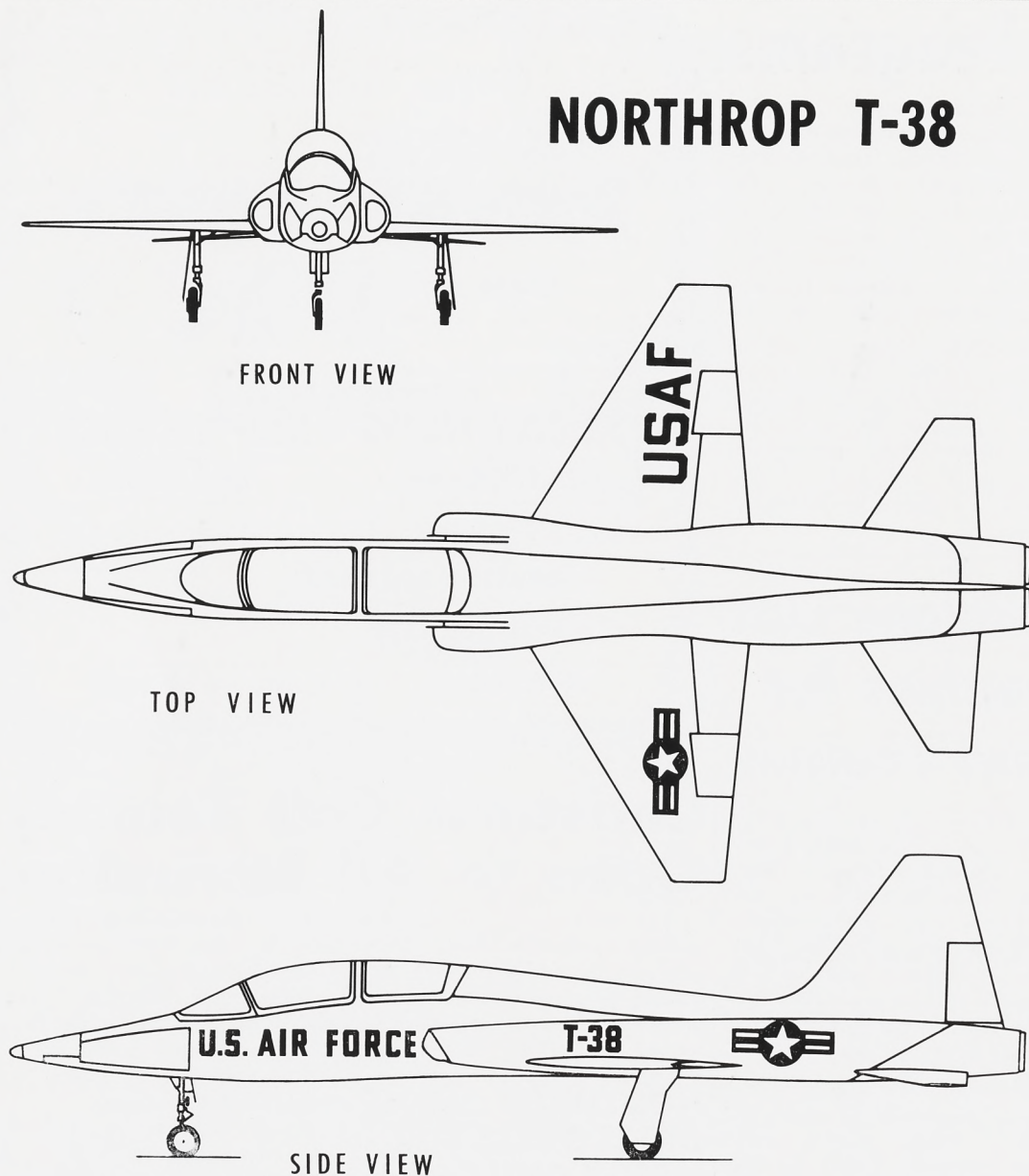
### MONDAY SNARK LEAGUE

Team	Won	Lost	Pts.	Opp.
3310	3	0	122	74
5240	3	0	93	88
Mariposa	2	1	124	101
1233	2	1	118	80
5300	1	2	89	93
5421	1	2	90	97
8800	0	3	89	120
3839	0	3	73	135

### INDIVIDUAL SCORING RACE

Team	Games	Team	Points
R. Kirkpatrick	3	Mariposa	68
Larry Wright	3	5421	47
Vern Mulliken	3	1233 El Seg.	41





## NORTHROP T-38

## Northrop News Pictorial

**FASTER THAN SOUND**—First three-view of Northrop's T-38 reveals sleek, clean lines of the supersonic aircraft designed for Air Force pilot training. Fuselage lines are characterized by distinct reverse or "Coke bottle" curvature at the wing junction point in conformance with "area rule" theory. Overall length is 43 feet, wing span 25 feet 3 inches, and height 11 feet, 11 inches. Maximum takeoff weight is 10,960 pounds. Powered by two turbojet engines with afterburners, T-38 range is over 1000 nautical miles. Optimum performance, ease of maintenance, low operating costs, are prime features of T-38 design.

## The Northrop Smithy

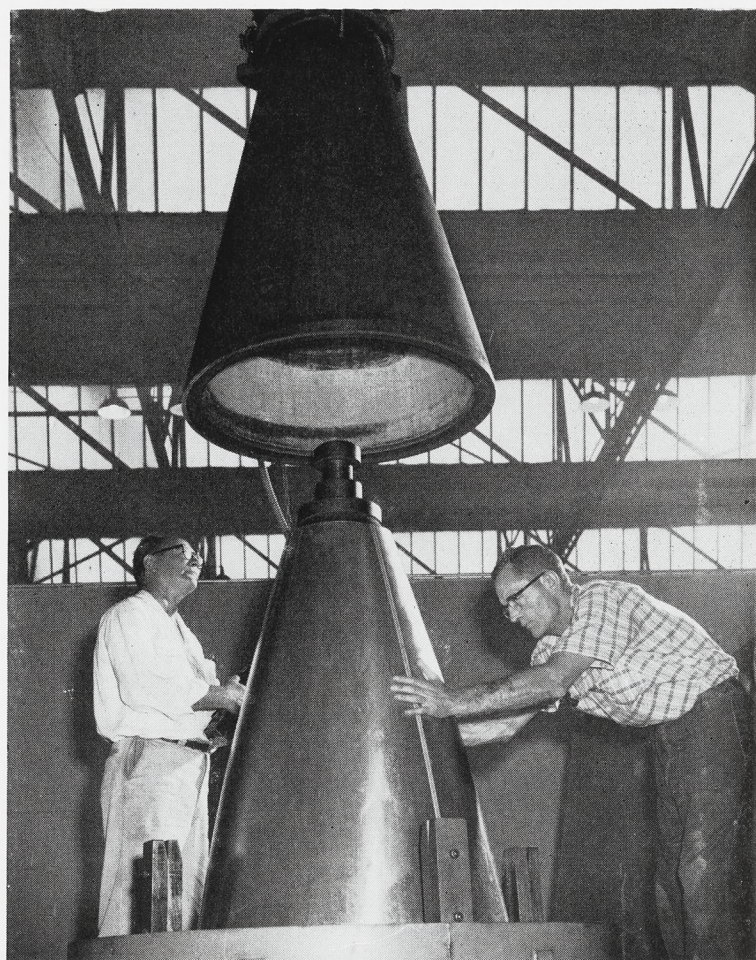
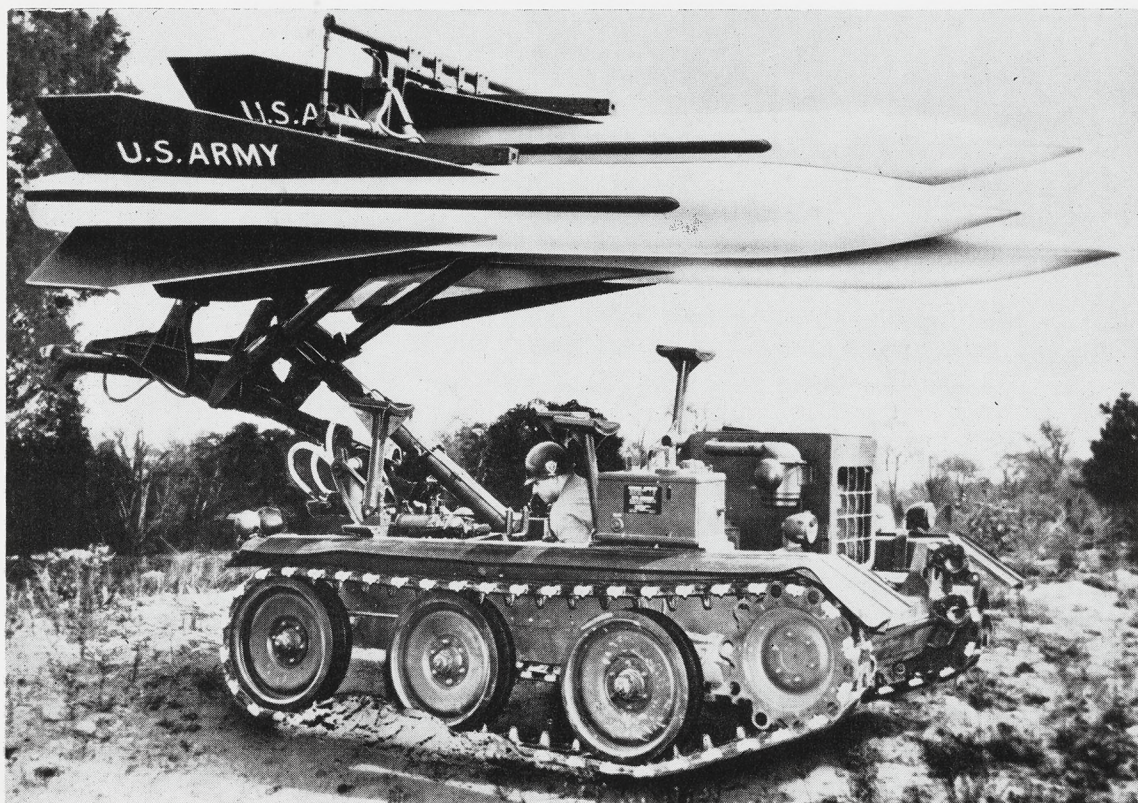


**IN THE MIDST OF MODERN** machines, the Northrop smithy stands. Howard Garoutte, Maintenance Department, conditions good steel for good service. A long-time blacksmith, Howard is called upon to make special production items which can only be wrought with hammer and forge.



## Hawk - - Triple Threat

**NEW HAWK DETAILS REVEALED**—Advanced radar "eye", left, for the Hawk missile ignores stationary objects and concentrates on a threatening moving target. The high speed surface-to-air Hawk missile, shown in a triple cluster on loader, below, is nation's newest air defense weapon capable of destroying high speed, low level attackers.



**SHEET METAL** Fabrication men, Elmer Wardlon and Charles Maitland check fixtures in manufacture of F-89 wing tip-tank assembly. When tanks are placed on modified version of the Scorpion long ranges are possible. AF recent distance flight with F-89 was from Goose Bay to Iceland—1300 miles. End product must be perfect result.





# A Merry Christmas

NORTHROP

## NEWS BRIEFS

**T-38 MILESTONE**—Newest Air Force duty at Northrop is that of T-38 project officer, and the man to be assigned this duty is Captain Clarence Edmonds, formerly assistant AFPR for North American-Fresno. Stated Colonel D. A. Simcoe, Northrop AFPR, "This is a significant step for the new supersonic trainer. It means that the T-38 has assumed full AF organizational status along with the Snark—."

**WHITLEY COLLINS**—Stated Wayne Parrish, president and publisher of American Aviation Publications, before the Northrop Management Club last week, "The aircraft industry has turned heavily into missile work . . . there are newcomers in the field . . . two major automobile builders . . . hundreds of electronic firms. The aircraft builders will have to fight hard to keep their rightful position in the field. There is one company, however, about which I have no concern. This is Northrop. Your Snark . . . successful and highly regarded . . . on target as to design and mission . . . T-38—already a hit . . . the Air Force has just ordered more than originally programmed, even before the airplane flies . . . the '156 . . . excellent prospect for sales overseas . . . A traditional aircraft company must have very agile management to take advantage of opportunities in the future. Northrop has that management. No one will ever accuse Whitley Collins of letting grass grow under his feet."

**INSURANCE SAVINGS**—Beginning of insurance year, September, saw Workman's Compensation rate drop to 16 per cent, reports George Gore, Corporation secretary and Division counsel. Direct savings—\$42,600 a year. Indirect savings (traditional industry factor relating to accident prevention, figured 7 to 1) are about \$298,200. Total to be chalked up on the black ink side—\$340,800. New rate is based on performance during '54, '55, '56. Disturbing note—October performance was poor. This handicap can be overcome totally if people exercise care.

**AIR FORCE FINANCE**—Established 15 November at Northrop is Air Force Finance office. Opening the new office will be Captain Robert J. Arnold, formerly of the AF Ogden Finance office. New office streamlines payment procedures. Company vouchers, once approved by AF Administrative Contracting Officer, go to Finance Officer, checks are written and payment made on the spot. Old system required that vouchers be sent to San Bernardino, checks were issued from there. Air Force advises that similar offices are being established with other major aircraft companies.

**TELEPHONE REMOVALS**—Lines and instruments, reports Robert R. Miller, vice-president and general manager, are not coming out fast enough. Twenty per cent target is 465 lines, 1300 instruments. Actuals to date—332 lines and 1059 instruments. Communications equipment men began survey last week, and are now making recommendation where lines and instruments can be chopped. Extra phone equipment in your department? Supervisors should advise Matt I. Iacovelli on form 42-32.

**INTERNATIONAL SALES EFFORTS** — To Japan — Gil Nettleton, vice-president, Northrop International; Irving Roth, assistant to President Whitley C. Collins; and Michael Creamer, Northrop Division. To Germany —technical assistance team on Northrop overseas program.

**T-38 PROGRESS**—Fuselage forward section will be ready for Edwards sled escape tests by mid-January. Design test sections are due out of jigs next. Then comes actual prototype parts. Other components, wings, control surfaces are keeping pace.

## SNARK MEN GRADUATE

### SAC MEN WILL ACTIVATE FIRST SM-62 MISSILE SQUADRON

U. S. Air Force "Missileairmen", who will man the world's first intercontinental guided missile squadron, graduated at formal military exercises from Northrop yesterday.

Maj. Gen. Alfred F. Kalberer, deputy commander, 15th Air Force, delivered the keynote address. Title of his speech was "Threshold of an Era", stressing importance of missiles in deterring aggression.

The 108 graduates are capable of performing pre-launch preparation of the Snark unit.

Ceremonies, complete with Air Force band and color guard, were held in front of the new

test facility designed for pre-launch check-out of the Snark.

The graduating class consisted of officers and airmen of the Strategic Air Command, Air Training Command and civilian employees of the Air Materiel Command.

All trainees successfully completed the instructional program supervised and conducted by Northrop technicians under the direction of Dr. J. N. McClelland.

Following the ceremonies at Northrop, the military personnel assigned to the Strategic Air Command will take up duties with the intercontinental guided missile unit recently activated.



Mrs. Collins again joins me with the sincere wish for a Merry Christmas and a Happy New Year for you and your families.

During the past year we made outstanding progress in our assigned task of building our national security. It gives me deep satisfaction to know that in the months to come your loyalty and your devotion to duty will certainly help us to continue our accomplishments together.

May the joy and happiness of the season be with you throughout 1958. God bless you all.

Whitley C. Collins



To  
All  
Norcrafters

Best wishes to all for the season.

Christmas is just seven days away. We have worked hard during these past 12 months and now it is time to share our traditional yule-time holiday with families and friends.

Nineteen fifty-seven was a serious year for us. We have been tested in lots of ways, but most of our objectives to date have been accomplished. I am proud of the team effort and excellent spirit shown by all of you.

Merry Christmas and Happy New Year.

Robert R. Miller

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif. Wednesday, December 18, 1957

## MORE SNARKS ORDERED

### Yule Holiday Announced - Eight Days

The traditional year-end holiday vacation with pay for all Norcrafters has been announced by Robert R. Miller, vice-president and general manager.

An uninterrupted eight-day period of time off for the holiday season will start at the close of the shift on Tuesday, December 21, and will end with the beginning of the shift on Thursday, January 2. All Norcrafters not on leave of absence will receive 40 hours straight time pay for the period.

In order to permit the eight-day vacation, a regularly scheduled eight-hour work day has been set for Saturday, January 4. Hourly personnel will receive straight time pay for the day and salaried personnel will not receive pay since this is a make-up (See HOLIDAY, Page 5)

### SHAREHOLDERS MEET AT NORTHROP HEAR DETAILS OF MISSILE ORDER

Northrop Aircraft has received a letter of intent from the Air Force for the production of more than \$70,000,000 in additional Snark SM-62 intercontinental guided missiles and related equipment, President Whitley C. Collins told shareholders attending the corporation's annual meeting at the Northrop Division offices.

At the letter of intent stage, the price is yet to be determined before a contract is signed.

Northrop received its first Snark production contract, in the amount of \$73,000,000, last summer.

The company president also announced that earnings for the first quarter of the 1958 fiscal year were materially higher than for the like period a year ago.

Net income for the three months ended October 31, 1957, was \$1,421,173, compared with \$1,136,089 for the same period ended October 31, 1956.

"The increased earning (See MEETING, Page 2)

### Norcrafters Launch Busy Yule Season

The holiday season at Northrop got off to a sparkling start. First events were the gala NRC "Private Party" at the Palladium, December 7, and the annual Management Club Christmas Party a night earlier. Photos of these parties appear on page 6, this issue.

Since then, the pace of Yule season activities has quickened. (See BUSY LIST, Page 5)

## Nortronics Establishes Operations, Facilities

The Nortronics Division commenced operations on Monday, December 16, it was announced jointly by Robert R. Miller, vice-president and general manager, Northrop Division; and Dr. William F. Ballhaus, vice-president and general manager, Nortronics Division.

This was called a major step toward the creation of the Nortronics Division as a self sufficient entity of the Northrop Corporation.

Under the direction of Dr. Ballhaus, the Nortronics Division consists of the Electronics Systems and Equipment Division. Fred Stevens, manager; and the

Systems Support Division, T. H. Quayle, manager.

Facilities of the Nortronics Division include Plant Two and Building Eight at Hawthorne, the Maple Street Building in El Segundo, and the entire Anaheim facility, it was stated.

Present plans call for the establishment of headquarters for Nortronics at the Plant Two location.

The Systems Support Division includes all activities at the Anaheim facility.

The Electronics System and Equipment Division consists of former Northrop Division ac- (See NORTRONICS, Page 2)

A Happy New Year







## Any Fine Birds?

**A VISIT AMONG DOLLS** — Little angora kitten, pet of Mailroom supervisor Jean Sterr, causes starry-eyed expressions among the group of dolls just completed by Mailroom gals. For a look at the activity which preceded this scene, see photo of Santa's busy helpers at work, page five.

## Shareholders Meeting

(Continued from Page 1)  
ratio reflects improved cost controls and the realization of profits in sub-contracting operations," Mr. Collins said.

Backlog as of October 31, 1957 was \$196,000,000, not including the pending additional Snark work. This compared with \$216-

000,000, as of July 31, 1957 and \$251,000,000 at October 31, 1956.

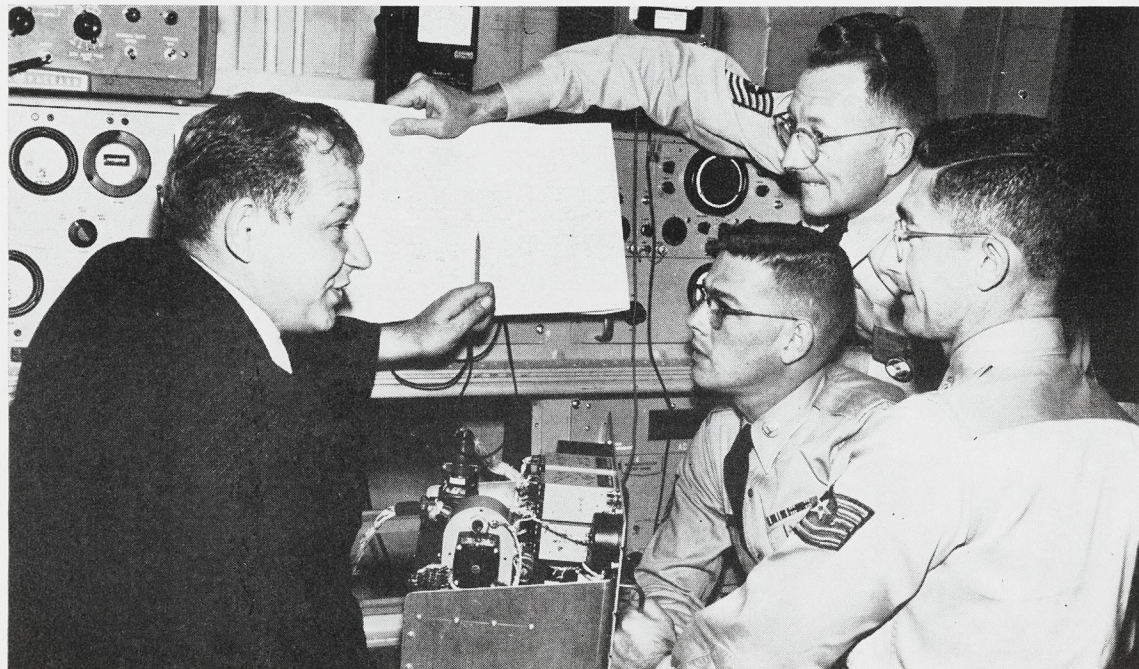
Mr. Collins pointed out that in addition to the increased Snark program several other major projects are in negotiation and that final contract signings are expected to boost Northrop's backlog to its highest total since 1955.

**ANNUAL STOCKHOLDERS MEETING**—Chairman of the Board William C. McDuffie and President Whitley C. Collins, standing center, outlined to stockholders Company projects for the coming year and work being done in each division. Other members of the board participated. Meeting was held in the recently completed Products Display Building. Shareholders received first-hand views of new T-38 trainer mock-up, Hawk missile system, Tow Target, Radioplane and Nortronics Division products. Following meeting, shareholders toured Northrop Division facility.



### THRESHOLD OF AN ERA—

Keynote speaker at Snark "Missileairmen" graduation yesterday was Maj. Gen. Alfred F. Kalberer, deputy commander, 15th Air Force. He stressed importance of missiles in deterring aggression. Three SAC airmen, among those graduated, are shown below receiving instruction on the step-by-step procedure of a maintenance checkout operation on the Snark. Instructor is Norcrafter Anthony Koloya. Airmen are, front to rear, T/Sgt R. D. Walls, T/Sgt H. C. Matthews, and M/Sgt H. B. Reiker. See story, Page one.



## T-38 Exemplifies Design For Simplicity Concept

"Design for simplicity," exemplified by Northrop's T-38 supersonic trainer, was cited as a significant new concept in high performance, low cost aircraft.

This Northrop dollar engineering approach to aircraft design and development was outlined by Welko E. Gasich at the annual meeting in New York of the American Society of Mechanical Engineers.

He said the new concept is based on the application of latest state-of-art technology to achieve simplicity rather than the complexity which dominates weapon system designs today.

As a result of this application Northrop has made available a low cost, less complex jet airplane in the 10,000-pound class to fill the military requirement for a supersonic basic trainer. The T-38 is approximately one-half the weight of today's combat aircraft, Gasich pointed out.

He said Northrop's use of small, light weight engines with a high thrust-to-weight ratio and

a "discrete choice" of components made possible a great saving in overall weight and size.

It is predicted, he added, that the T-38 is the forerunner of a new "design for simplicity" concept in high performance, low cost aircraft.

## Nortronics

(Continued from Page 1)

tivities responsible for the design, development and manufacture of electronic, electro-mechanical, and opto-mechanical products and components.

A further announcement, Dr. Ballhaus said, outlines those departments and key personnel necessary for implementing operations of the Electronics Systems and Equipment Division.

The organization of Nortronics is designed to improve the ability of the Northrop Corporation to better serve its customers.

# Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 7

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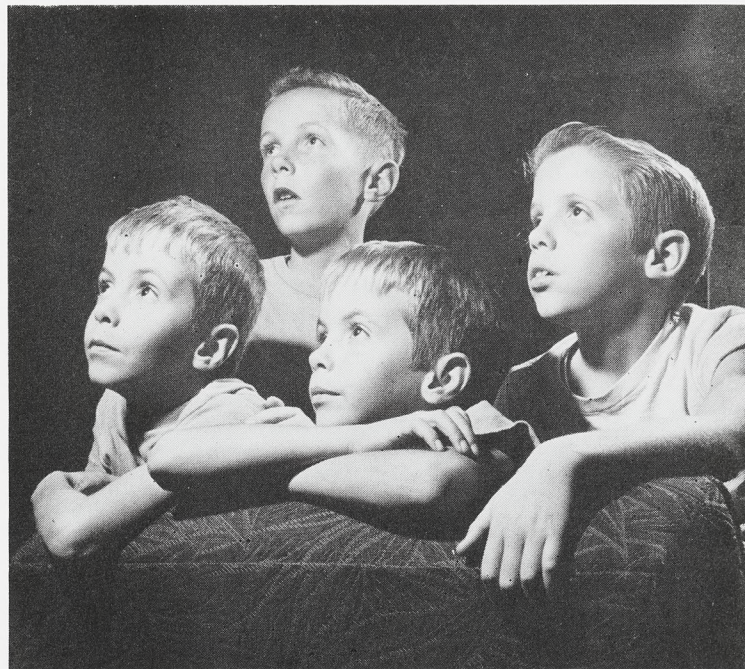
CHARLES BRADFORD, Editor

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## Editorial in Sanctissima



# Norcrafters Relate Joy In Giving At Christmas

*Christmas is a time of good cheer—a time of visiting with loved ones—a time of reverence. It is also a time of giving. There are many kinds of gifts exchanged at Christmas, but no matter what the gift may be—large or small, costly or inexpensive—it must be given from the heart.*

*Inquiring Reporter asked this question:*

**"What Christmas gift did you enjoy giving most?"**

**Clyde "Smitty" Smith, leadman, Guidance Fabrication** — "The gift I got the biggest kick out of giving was one I bought for my wife about 12 years ago in Tucson, Arizona. A wrist watch — first one she'd ever had, and she sure was proud of it. Matter of fact, she still has it. Been married 40 years now, and that's a long time. Lots of gifts have been exchanged, but I guess I remember that one best."

**Shirley Matson, assistant librarian, Anaheim** — "The gift I remember giving most was when I was a small girl in Illinois. My brother and I saved our pennies for months to buy our mom a Christmas gift. It was the first time we really saved and bought a gift for her—all by ourselves. Sorry, but can't seem to remember what the gift was. I do know, though, that it was a big time in my life because I think it was then that I actually learned the meaning of giving."

**Don Cox, service publications writer, Torrance** — "Though it was not actually a gift I gave, the home we bought in 1955 was our nicest gift. Our first home — moved in just before Christmas. Sure a change after renting all those years. Our children were pretty excited about it, knowing they'd have a room of their own. And, of course, my wife and I were happy, too. Other gifts have been nice, but buying our home and being in it at Christmas made it the nicest Christmas gift of all."

**Joy Niederstadt, manufacturing control clerk, night shift, Fabrication Dispatch** — "I was almost as thrilled as my mother last Christmas when I gave her a vacuum cleaner — her first one. She'd wanted one so long, so I decided to save and give it to her then. Part of the fun was that it came as a complete surprise to her. Makes you feel good to make someone happy, and she was certainly happy that Christmas."

**J. Grant Macdonnell, assistant treasurer, Northrop Division** — "The most pleasure I have received from giving a gift occurred many years ago when I visited a customer of the bank I worked for to iron out details of her husband's estate. She was 80, a non-citizen, taught to suspect strangers. However, we became friends and she was eventually a welcome visitor to our family. When she died, her will revealed a very small bequest to me. As I read the document, I realized I had given her a precious gift — a gift of friendship. It read — 'and to my good friend, Mr. Grant Macdonnell.'"

**Anne Westervelt, instrument technician, Instrumentation Lab, Florida** — "All gifts I have given have brought me pleasure — the gift of being able to give is best of all. This year I'm buying my husband, Wes, a wrist watch. He works at Northrop. We also worked together in Hawthorne before transferring here. I know lots of people there — wish them a Merry Christmas."

**Charles Wigmore, facility engineer, Manufacturing Engineering, Palmdale** — "Giving is a pleasure to be enjoyed by everyone, and especially during the Christmas holidays. To see the joy and happiness expressed by my son when he receives his first train this Christmas will be a pleasure that has no equal."

**Edna Lankovsky, department clerk, Flight Service, LAX** — "I remember one year when we shopped for our two boys, David and Keith. We bought a hobby horse for David, almost 3 then. On Christmas morning, he didn't pay any attention to it at all! He liked a Buck Rogers gun and holster set. He picked it up, so thrilled, and exclaimed, 'Oh, look what Santa Claus brought me!' His reaction was the thing—a complete surprise to us. The gun and holster set was his most prized possession."

**Ed Lund, clerk, Receiving, Mariposa** — "Well, I'm getting married just before Christmas this year, Dec. 21, and when I give my girl that wedding ring, it will be the best of all. Been engaged since April, and Christmas is such a nice time that we picked that date. Also, school is out then and we can have a honeymoon. You see, we both attend El Camino College. I'm majoring in education, and she's a pre-med student. Yes, I am pretty happy, and thanks for saying 'congratulations.'"

**C. M. "Charlie" Herrera, crew chief, Experimental Flight Test, Edwards** — "In 1947 I gave my son Henry, 4 years old, his first dog. A little red Cocker Spaniel. His eyes sure did light up when he saw that puppy — named him Topsy. Had him all these years, then just a couple of weeks ago he was run over by a car. Sure miss him—almost like a member of our family. Will try to get another dog for Henry this Christmas, though. Seems like boys and dogs go together."

**HARK! WHAT DO WE HEAR?**—Can that be the silver tinkling steps of Christmas? Yes, we guess it is. We hope so. Quiet, everybody! Let's listen some more. Northrop juniors who are containing themselves, with difficulty, are: at left, Susie, Toni, and Pamela Woods, daughters of Cynthia Woods, Tool Control; at right, the Sparks—twins Donald and David (front), Bill, and Jimmy—all sons of Warren Sparks, Manufacturing Control. With this much mental Yuletide "English" being applied by the youngsters of the country, us old folks will just have to stop this spinning globe, let all that is Christmas hold full sway.



RIDES WANTED		RIDES WANTED	
7:00 a.m. — 3:45 p.m.		8:00 a.m. — 4:45 p.m.	
(Zone 1)	SUNSET & WESTERN, Hollywood. A. L. QUISENBERRY (5962-24070, Ext. 1852). HO 3-4571. 2-1	(Zone 4)	MONTEBELLO AREA. (Car pool desired. Will travel any route.) CHET MAC NEIL (3351-41225, Ext. 1415). PA 8-7822.
(Zone 5)	NORMANDIE & EL SEGUNDO, Los Angeles. T. D. GARLAND (5222-54816, Ext. 1918). PL 5-8643. 2-5	(Zone 5)	WOODRUFF & SOUTH ST., Lakewood. (Need driver for existing car pool; have pass.) GARRY DE LEEUW (3315-3093, Ext. 619). TO 6-7404. 5-5
(Zone 6)	SATICOY & WINNETKA, Canoga Park. (Car pool considered.) HOWARD W. WALKER (7620-44791, Ext. 2049). DI 8-4406. 2-5	(Zone 6)	CARSON & STUDEBAKER RD., Long Beach. (Car pool desired. Riders considered, temporarily.) E. M. PIPER (3330-30398, Ext. 1835). HA 9-9744. 5-5
(Zone 6)	VERMONT & 155TH ST., Gardena. EDNA JACKSON (5352-25560, Ext. 1453). DA 2-4641. 2-6	(Zone 6)	HARCO & WOODRUFF, Long Beach. GLADYS L. NESLAND (4200-13586, Ext. 2586). HA 9-7277. 5-6
(Zone 11)	FREEMAN & 116TH ST., Hawthorne. BETTY EVANS (5561-22579, Ext. 1280). GRAND & SIERRA, El Segundo. RACHEL WHITNEY (5336-49470, Ext. 2506). EA 2-9834. 2-11	(Zone 8)	WESTERN & 238TH ST., Torrance. MARGARET LOGAN (9540-54815, Ext. 2113).
(Zone 12)	OCEAN PARK BLVD. & 20TH ST., Santa Monica. WILLIAM PARTRIDGE (5503-50793, Ext. 1385). EX 6-8684. 2-12	(Zone 10)	PACIFIC COAST HIGHWAY & GUADALUPE AVE., Redondo Beach. NANCY BROOKS (3482-51205, Ext. 1663). FR 4-0833. 5-10
(Zone 14)	FLORENCE & CRENSHAW, Los Angeles. MARGARET ANN PARKS (5352-49698, Ext. 1453). PL 9-3910. 2-14	(Zone 10)	HERMOSA AVE. & 17TH ST., Hermosa Beach. (Ride urgently needed.) ROSEMARY L. PENNY (3120-48588, Ext. 2536). FR 2-0625. 5-10
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	3:45 p.m. — 12:15 a.m.	
(Zone 14)	FLORENCE & CRENSHAW, Los Angeles. MARGARET ANN PARKS (5352-49698, Ext. 1453). PL 9-3910. 2-14	(Zone 2)	FLORENCE & VERMONT, Los Angeles. M. L. BARBER (5353-49465, Ext. 2373). PL 9-5463. 6-2
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	(Zone 5)	ORANGETHORPE & MILLER, Buena Park. (Car pool considered.) FRED HOECHSTETTER (5516-24258, Ext. 2062). TE 3-8806. 6-5
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	4:45 p.m. — 1:15 a.m.	
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	(Zone 10)	VAIL AVE. & CURTIS, Redondo Beach. MARIAN WALTER (5353-16127, Ext. 1686). FR 4-2190. 8-10
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	Miscellaneous — Split Shift	
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	(Zone 12)	PICO & LINCOLN, Santa Monica. (Hours: 4:15 - 12:45 a.m.) ARIETTA KURTZ (5980-23927, Ext. 2600). EX 6-4881. 10-12
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	RIDES OFFERED	
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	7:00 a.m. — 3:45 p.m.	
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	(Zone 2)	N. FIGUEROA & AVE. 59, Los Angeles. (Have room for 2 riders; have stall.) MARTIN M. CARMAN (5564-21900, Ext. 555). CL 6-5685. 12-2
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	(Zone 5)	DEL AMO & WOODRUFF, Lakewood. (Room for 3; prefer passengers living east of Long Beach Blvd.) P. H. MAURER (5421-15210, Ext. 1856). TO 6-3349.
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	(See GMW, Page 4)	
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	8:00 a.m. — 4:45 p.m.	
(Zone 14)	MAGNOLIA BLVD. & LAUREL CANYON, North Hollywood. (Car pool considered.) MONTE TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14	(Zone 3)	FERRIS & GILMAN, El Monte. (Car pool desired. Will travel any route to plant via Montebello.) BILL HANNA (3114-29115, Ext. 2751). GI 8-2988. 5-3



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday following publication.

## FOR SALE

VOLKSWAGEN, 1956 hardtop, quad pipe Abarth muffler, extras, must sell. TE 5-4874.

FORD PARTS, 1934 pickup, wheels, frame, radiator shell, hood, miscellaneous. PL 4-4384.

STUDEBAKER, 1948, overdrive, new battery, \$75. OS 5-2043.

RADIO-PHONO, RCA radio, 3-speed V/M record changer, table model combination, 3 years old, \$35. DA 6-7799.

RADIO-PHONO, Artone, combination, mahogany console, \$65. DA 3-6505.

FUR, Jap mink coat, full length, size 10, \$125. OL 6-2735.

SECRETARY, cherry mahogany, \$100. GE 1-3731.

BED, single, finished mahogany, box springs, \$15. PL 6-5220.

PONTIAC, 1952 4-door sedan, Hydra-Matic, dual drive shift, \$385. FR 6-0386.

FURNITURE, 2 mahogany end tables & coffee table, 2 lamps, \$30. PL 5-4580.

DESK, large roll top, needs refinishing, \$25. FR 5-4763.

TV, large, custom, planters, blonde & black Oriental, \$130. FR 8-2941.

ROLLER SKATES, women's, Chicago precision, size 7-8, \$12. OR 1-6486.

WASHER, 1949 Kenmore automatic, w/suds saver, \$35. FR 5-8536.

CHEVROLET, 1949, 2-door sedan, \$200. PL 5-2828.

SEWING MACHINE, Singer portable, carrying case. DA 4-9870.

AM-FM TUNER, Harmon-Kardon Over-tune, \$70. DA 3-3767.

FORD, 1954 Customline 2-door sedan, Ford-O-Matic, \$750. FR 4-0550.

GUNS, pair Colt .45s, Frontier Peace-maker models, new 5 1/2" barrels, \$190. PL 4-9711.

BOAT, 12' fiberglass, oars, life jackets, Mastercraft trailer, \$300. TE 1-2555.

PONTIAC, 1946, \$100. OR 7-4206.

FORD, 1956 Fairlane Town Sedan, Ford-O-Matic, power steering, extras, \$1600. FR 6-6218.

CHEVROLET, 1949 2-door sedan, new paint, \$300, take contract. PL 5-9075.

PLYMOUTH, 1948, \$125. OR 4-1121.

DINING ROOM SET, limed oak, drop leaf, extra leaf, table, 4 chairs including host chair, tweed upholstery, \$35. OR 4-5554.

OLDSMOBILE, 1951 Super 88, 4-door. FR 5-9790.

DINING SET, Duncan Phyfe, mahogany, buffet, 6 chairs, \$165. FR 6-9916.

BICYCLE, girl's 20", \$15. FR 8-1660.

AQUA LUNG, double stage regulator, 80 minute bottle, \$80. DA 9-6466.

GOLF CLUBS, bag, \$35. PL 4-7891.

PIANO, Starck upright, bench, new straps, \$90. OS 5-4345.

FURNITURE, divan & rocker, \$35. DA 4-6748.

COCKATOOS, 2, male, cage, equipment, \$20. OR 4-9224.

HOUSE, modern 2-bedroom, near Northrop, carpet, extras. OS 6-2120.

VACATION TRAILER, 1957 15' Aljo, elec. brakes, ice box, stove, nylon cover, \$800. DA 9-4065.

TROMBONE, Pitt-American, \$35. EA 2-4747.

EDGER, half mower, Capitol, recently sharpened, \$12. OS 5-4736.

MERCURY, 1953 hardtop, must sell. FR 6-3884.

TYPEWRITER, Royal manual, \$20. DA 4-9019.

BICYCLE, girl's 24", lightweight racer, foot brakes, \$20. FR 2-8148.

WASHER, Kenmore, wringer, \$25. OS 6-5910.

TV, 17" console, \$75. OR 1-1764.

DINETTE SET, 4 chairs, mahogany, \$30. FR 5-3145.

HOUSE, 3-bedroom, den, Norwalk, carpet, fenced, fireplace, built-in range & oven, auto, washer, refrigerator, disposal, patio, garage, \$17,000, \$500 down. DA 3-6152.

SHOE SKATES, ladies' white, semi-precision, metal case, size 8 1/2, \$15. OS 5-1545.

CHEVROLET, 1955 4-door station wagon, overdrive, UN 9-9354.

MOTORCYCLE, 1955 Triumph, new seat, \$550. DA 4-8189.

CAMP TRAILER, 2-wheel, OS 5-3100.

KNITTING MACHINE, Matador, DA 3-1946.

HEIGHT GAGE, Starret 12", attachment, case, never used, \$65. LU 2-2120.

RECORD PLAYER, Garrard Model T, 3-speed, ceramic turnover cartridge, mahogany base. OR 4-7360.

CEDAR CHEST, Lane, limed oak, \$50. PL 6-0015.

CODE COURSE, on tape, International Morse. FR 4-4140.

## FOR SALE

FORD, 1946 2-door, \$75. OS 6-3891.

CHEVROLET, 1940, \$125. OS 6-8371.

CHINA CABINET, old style, 3 sides curved glass, oak construction, walnut finish, \$75. OS 6-9521, 9 a.m. - 3 p.m.

DODGE, 1952 Coronet 4-door, \$395. Box 705.

IRONER, Kenmore, w/chair, \$90. PL 4-8431.

HOSPITAL BED, w/trapeze, foam rubber mattress. OR 1-1950.

PONTIAC, 1949 2-door sedan, Hydra-Matic, \$150. HO 4-6094.

UTILITY TRAILER, 4'x7', 30" stake sides, 2-wheel, tarp., rear lights, \$50. FR 4-7059.

CAMPER, for 1/2-ton truck, \$175. FR 2-0149.

BIKE, boy's 24", \$15. VE 9-2685.

RIFLE, Remington 760, 30-06, fired 10 times, sling, rubber cushion butt plate, \$85. PL 6-0015.

BANJO, OS 6-6449.

PIANO, Wurlitzer Strad, 52" high, \$190. AX 3-0746.

SKATES, men's black roller, size 8 1/2, \$5. DA 3-5449.

BUICK, 1955 Special Riviera, Dynaflo. AX 4-4613.

NASH, 1954 Ambassador, continental kit, Hydra-Matic. DI 3-8640.

STOVE, Pan American, gas, \$20. OS 6-8893.

ADDING MACHINE, Remington Rand, manually operated, 10 rolls paper, \$40. OS 5-8983.

HEATER, gas console, 27", auto pilot, \$15. PL 8-7138.

TRAILER, 23' Masterbuilt, gas heater, electric refri., \$500. OS 5-3081.

TV TUNER, remote control, never used, \$10. FR 9-2710.

TIRES, 5, 7-60x15 Firestone Deluxe Champion tubeless white walls, used. AX 4-2194.

PISTOL, Ruger single 6, .22 cal., \$60. FR 5-4574.

ELECTRIC SKILLET, w/cover, still in carton, \$7. Box 701.

FORD, 1953 tudor, 6 cyl., lowered. PL 6-7449.

FORD, 1953, custom V-8 club coupe, overdrive, \$625. FR 2-4743.

ELECTRIC CAR, remote control, 8" Studebaker, scale model, \$4. LO 6-1546.

ELECTRIC TRAIN, American Flyer, extra cars, track, \$30. HA 9-5344.

TRAILER, w/Sportsman cab, sleeps 4, side bunks, \$85. OS 6-7055.

GUITAR, Martin, 8 mo. old, case, \$55. NE 8-2268.

MERCURY, 1951 4-door sedan, auto, transmission, \$250. FR 9-7805.

ACCORDION, 120 bass, case, \$175. OS 6-7322.

FORD, 1954 pickup, V-8 1/2-ton, \$650. OR 4-1514.

CHEVROLET, 1956 convertible, full power, \$1895. WE 6-0953.

IRONER, Easy, FR 5-9648.

FORD, 1954 V-8 club coupe, new white wall tires, \$650. FR 5-5958.

BOSTON TERRIERS, pedigree, AKC, ready 1 week before Christmas. OS 5-9695.

PLYMOUTH, 1951 2-door, \$400, entering service. EX 7-4825.

CHEVROLET, 1949 4-door sedan, \$195. PL 7-2719.

CHEVROLET, 1955 station wagon, \$1650. DA 3-6658.

BEDROOM SET, chest, vanity, bench, night stand, light mahogany, \$125, with box spring, mattress, \$175. PL 3-9964.

HI-FI EQUIPMENT, VM stereophonic tape recorder, other. FR 6-4239, before 9:30 a.m., after 9:30 p.m.

VACUUM CLEANER, Kirby, attachments, floor polisher, \$75. OS 6-4851.

HILLMAN MINX, 1952 convertible, \$250. FR 5-3936.

RADIO-PHONO COMBINATION, Spartan, bleached mahog., \$50. OR 7-8775.

COFFEE MAKER, Sunbeam, \$20. PL 9-2780.

DISHES, made in Japan, hand painted China, \$30. OS 6-7470.

PARAKEETS, 2, male & female, w/training cage, \$7. FR 9-2659.

BICYCLE, girl's 20", w/trainer wheels. DA 6-1471.

DINING SET, solid oak, 4 chairs, padded seats, \$25. DA 4-9033.

TRAIN, Lionel electric, plywood board, accessories, \$35. PL 5-8158.

BICYCLE, boy's 24", \$15. FR 4-2590.

WASHER, automatic, Laundrell, \$35. RE 1-7492.

BED-DIVAN, modern, \$85. FR 6-6684.

BICYCLE, boy's 28", double bars, balloon tires, \$24. EX 8-5201.

RUG, 10'x18" cotton boucle, grey, \$50. DA 9-7723.

## FOR SALE

DINETTE SET, extension table, 6 upholstered chairs, mink walnut finish, plastic top, year old, \$85. FR 2-0631.

BOAT, 17' cabin cruiser, 30 hp. Evinrude electric, glassed, elec. bait tank, trailer, life jackets, \$1800. TO 6-7962.

REFRIGERATOR, GE, family size, small freezing compartment, \$110. OR 7-2848.

HOUSE, 2-bedroom, den, drapes, carpet, disposal, fence, planters, 2-car garage, GI resale, \$16,000. OS 5-0428.

JAGUAR, 1952 XK-120 roadster, runs good, needs attention, \$850. TE 3-0698.

CRIB & PLAYPEN COMBO, portable, converts to half size crib, \$7. OR 2-1731.

BICYCLE, English racer, w/accessories, \$35. PL 3-8455.

STENOGRAPH MACHINE, La Salle, with stand, \$80. OS 6-2154.

CAMERA, Contax IIA, f.1:2 Sonnar lens, Nikor telephoto lens f.1:35, 135 mm., flash, filters, viewfinder. OR 8-8306.

BABY BUGGY, \$15. DA 4-4750.

PARAKEET, large age, \$4.50. EX 1-3904.

CHEVROLET, 1954 Bel Air, Powerglide, \$985. OR 4-8065.

BUICK, 1950 Special, \$225. DA 3-6954.

CAR COVER, canvas, for Austin Healey 100; workshop manual for Austin Healey. PL 2-9436.

RANGE, chrome top Gaffers & Sattler, fully auto, used 6 months, \$150. DA 9-3900.

CHEVROLET, 1947 club coupe, 2 spare tires, \$135. OR 2-6447.

TRUCK, 1947 1 1/2-ton stake, \$425. FA 8-8056.

RUG, 12'x18", floral pattern, w/pad, \$90. OR 4-6413.

RELAXICISOR, used twice, \$100. DA 9-6597.

RANGE, 1956 full size gas, ariddle, clock, timer, lights, has been in storage, used 4 1/2 months, \$70. DA 3-6050.

AMPLIFIER, Boen, 35 watt, DB 130, R 660 AM-FM tuner, \$185. PL 6-0242.

TRAILER, 1955 35' Angelus, new awning, steps, paid-up insurance for bal. of contract, \$2800. OS 6-1150.

OLDSMOBILE, 1951, new tires, Hydra-Matic, extras. AX 3-8644.

CABIN CRUISER, 18', bunks, head, bait tank, 30 hp. elec. starting outboard, fully equipped, glassed, 10 mo. old, \$1250. OS 6-8565.

FORD, 1956 Country Sedan, 9-pass. station wagon, T-bird engine, power steering, brakes, air conditioner, new battery, brakes, paint. JA 7-8309.

BABY CARRIAGE, DA 9-5986.

BUICK, 1951 convertible, new tires, all power, take over payments, \$39 mo. OS 5-0674.

SHOTGUN, model 12, 12 gauge Winchester, \$50. Box 703.

VOLKSWAGEN CAMPER, 1956, full equipment. TE 3-5500.

CHEVROLET, 1957 Bel Air sports coupe, take over payments, OS 6-9492.

TONNEAU COVER, black, for 1955 or 1956 Ford convertible. GR 7-1937.

LIONEL TRAIN, diesel locomotive, cars, ice depot, cattle loader, switchtracks, crossings, on 5'x8' plywood, extra track and parts. PL 4-0778.

ACCORDION, Universal, 5-switch, model 3451, case, \$250. WI 7-4439.

CAMERA, 35 mm., Kodak Retina I, \$15. FR 5-7387.

BOAT, 15' glassed, trailer, V-8 engine, utility style, \$325. OS 6-3319.

OVERCOAT, man's heavy blue, size 42-44, \$10. GR 7-1539.

CHEVROLET, 1956, 210 series, 4-door. AX 3-7698.

ENCYCLOPEDIAS, 1957 American Peoples, blonde case, 8 vols. Hobbies & Crafts to buyer. Box 704.

BABY FURNITURE, bed, high chair, training chair, stained wood, \$35. UN 4-5614.

## WANTED TO BUY

INCOME PROPERTY, 1 or more units, buy outright or assume present loan. PL 9-6332.

CAMERA ACCESSORIES, for Omega D2; electronic test equipment. GE 1-3731.

TRAILER, large, w/cover. PL 4-7891.

FORD, old roadster or coupe, 1927-1934, rebuildable condition. NE 8-1076.

BABY FURNITURE, play pen & Baby Tenda. EA 2-0181.

CELLO, half size, any cond. FA 8-2800.

SLIDE RULE, polyphase-duplex or log-log. FR 5-7810.

TONNEAU COVER, for 1957 Ford convertible. FR 4-4140.

GUN, .410 over & under or .410 single shot. HA 9-5344.

SNARE DRUM, used, in good condition, reasonable. OR 4-8824.

## FOR TRADE

AIR CONDITIONER, Philco 1/2-ton, for Revere or Webcor tape recorder. OS 5-7459.

## RENTALS OFFERED

APARTMENT, 1-bedroom duplex, unfurnished, TV jack, washer outlets, paved parking near Northrop, \$65. PL 5-3995.

APARTMENT, partly furn. 2-bedroom, Hermosa Beach, \$80 w/lease. TE 2-6746.

HOUSE TRAILER, modern, near Northrop, adults only, \$45. PL 4-2570.

APARTMENT, furnished 3-room, \$95, utilities paid. RE 1-7492.

# Safety Office Features Eye Glass Prescriptions

Ask a Norcrafter how much his or her eyes are worth and you'll likely receive the reply—"priceless". And, that's the reason why there's a resident optician on duty at Northrop.

Norcrafter who work in areas where exposed eyes could be injured by small objects flicked through the air, can purchase all types of safety prescription glasses through Northrop at industrial prices. The services of Jim Cushman, a trained optician, are available to any Norcrafter who would like to purchase prescription ground safety glasses.

Personnel may have their personal eye doctor prescribe the proper lens needed and then have the glasses made through Northrop with payroll deductions for payment of the glasses.

Interested personnel may contact Jim Cushman on his regular visits to all work areas or they may call the Safety Office, extension 655 or 1430, on the following days: Thursday during the second shift and Wednesday from 10 a.m. to 7 p.m. Each department has a schedule listing the days and times when the optician's services are available in the work areas.

Safety glasses, Jim explained, feature a full rim with heat treated lenses of standard thickness to meet Bureau of Standard

## RENTALS OFFERED

APARTMENT, furn. 1-bedroom, Lennox, utilities paid, vacant Dec. 18. \$90. OR 7-0937.

PENTHOUSE, 3-room, adults, \$45. LU 9-0486.

HOUSE, 3-bedroom, fenced, Manhattan Beach, near schools, shopping, \$105 partly furnished, \$95 unfurnished. Box 706.

LAPIDARY UNIT, combination rockhound gem stone. OR 4-2352.

SLEEPING ROOMS, for men, \$7.50 week. OS 6-7470.

## RENTALS WANTED

HOUSE OR DUPLEX, 2-bedroom, unfurnished, southwest beach area, have child, \$80. PL 6-7566.

APARTMENT OR HOUSE, furnished, for working couple, Inglewood-Hawthorne, to \$100. OR 4-4912.

HOUSE OR COTTAGE, 1-bedroom, furnished or unfurnished, w/garage, Inglewood. AX 3-0746.

APARTMENT, small 1-bedroom or court and bachelor apartment adjoining, w/w floor covering, prefer 1-floor structure, near plant 3, permanent, references, need by Jan. 25, 1958. Box





**CHAMPION ARCHER**—R. S. Coffey, winner in the recent NRC Archery Club trophy shoot, is pictured here in a championship pose. Looking straight down the arrow was courageous Northrop night photographer Lew Meyer.



**SANTA'S HELPERS**—Eight Plant One Mailroom ladies established a doll dressing workshop at the home of supervisor Jean Sterr recently. Busy dress makers are, around the table from sewing machine, Carol Buckland, Evelyn Cabral, Marlyss Drager Turk, Janet McBride, Shirley Cawthon, Jean Lister, Barbara Cornelius, and Delayne Rasmussen. Photo on page two shows results of evening's effort. The dolls will be given to needy children.

## 15-Year Pin Roster Grows As 64 More Receive Honor

Over nine centuries of service was represented by the latest group of Norcrafters to be honored at 15-year pin presentation ceremonies for October and November.

Each of 64 eligible 15-year Norcrafters received the commemorative awards from Robert

R. Miller, vice-president and general manager. Photo of the recipients on hand for the award appears below.

This latest group brings the total number of 15-year Norcrafters to date to 1156—an impressive accumulation of over 173 centuries of service!

# Holiday Spirit Sparks Busy List Of Traditional Yule Festivities

## CHILDREN'S CHRISTMAS PARTIES

**Palmdale-Edwards**  
Saturday, December 21,  
1 p.m., NRC Clubhouse,  
Palmdale.  
**El Segundo**  
Saturday, December 21,  
10:30 a.m., Paradise Theater.  
**Hawthorne & Torrance**  
Sunday, December 22,  
1 p.m., NRC Clubhouse,  
Hawthorne Boulevard.  
**Anaheim**  
Sunday, December 22,  
1:30 p.m.  
Anaheim Union High School.

## DOLL DRESSING CONTEST

Prizes for the most beautifully and most uniquely dressed dolls.  
**Torrance**  
Judging held Dec. 16  
**Anaheim**  
Judging held Dec. 17  
**El Segundo**  
Judging held Dec. 17  
**Hawthorne**  
Judging December 18  
**Palmdale**  
Judging December 19

## MIXED CHORUS PROGRAM

Daniel Freeman Hospital  
December 18  
Los Angeles Orphanage  
December 20  
Redondo Beach City Park  
December 21  
Messiah Baptist Church  
December 22

## ALL-FACILITIES BOWLING TOURNAMENT

**Annual Christmas Tournament**  
Roselanes Bowling Alley,  
December 27, 28 and 29.  
Bowling—10 a.m. to 10 p.m.

## ALL-FACILITIES GOLF TOURNAMENT

**Annual Christmas Golf Tournament**  
Western Avenue Golf Course,  
December 26 and 27,  
tee time 8 a.m.

## SKIN DIVING

**Christmas Dive**  
Catalina Island,  
NRC Clubhouse,  
December 28 and 29.

## DEPARTMENT PARTIES

**Maintenance Department**  
Annual Christmas Party,  
NRC Clubhouse, Hawthorne,  
December 21, 8 p.m.  
**Instrumentation Lab**  
Annual Christmas Party,  
NRC Annex, Hawthorne,  
December 21, p.m.

(Continued from Page 1)

Three other traditional events have added to the excitement—the NRC-Management Party last Saturday, the LAX Children's Party earlier that day, and last night's special Christmas program by the NRC Mixed Chorus.

These colorful festivities were part of a busy schedule which extends into the eight-day Northrop vacation period. There are plans for parties, programs for helping the less fortunate at Christmas time, and favorite year-end contests. All are born of the spirit of the holidays.

## FOR THE CHILDREN

An estimated 10,000 sons and daughters of Norcrafters will be entertained at Christmas parties this holiday season. See accompanying schedule of season events for the Children's parties.

Gifts, refreshments, entertainment, and most important of all, a visit by Santa, will be highlights at each of the NRC sponsored gatherings. At the Hawthorne and Torrance party this coming Sunday afternoon, Santa will be joined by Mrs. Claus and all his little helpers. Special feature of the EL Segundo program at the Paradise Theater will be a two-hour showing of popular children's films.

The first of the children's parties, held last Saturday afternoon at the LAX facility, featured the spectacular arrival of Santa by the Northrop helicopter.

## FOR LITTLE GIRLS

The annual Doll Dressing Contest is well underway at all facilities. A total of approximately 300 dolls will have been entered by the date of judging at Palmdale-Edwards December 19.

Betty White, star of "Date With the Angels" and "I Love Elizabeth" television programs, has been invited as the judge for the Doll Dressing Contest at Hawthorne. Representatives of the Baptist Children's Home were scheduled to do the judging at El Segundo yesterday.

Undressed dolls were furnished by NRC, and theme of the annual contest was "dress a doll for a needy child." Prizes for the most beautifully and most uniquely dressed dolls are in store for contest winners at each facility.

Following the judging, all entries will be presented at Christmas to young girls who might not otherwise receive a doll.

## FOR LESS FORTUNATE

One of the most appropriate and rewarding expressions of the holiday spirit at Northrop is the "Adopted Family" program. This is the fourth consecutive year that Northrop departments have chosen to contribute gifts

to help brighten the Christmas holiday for those less fortunate.

Most significant feature of the completely voluntary program is that the recipient families remain anonymous.

Personnel Activities office furnishes information on anonymous needy families for adoption by the departments.

Other Northrop groups, including Toastmaster Club 2583 which has adopted a family, and individuals are contributing gifts to the program. In addition to the donations turned into Personnel Activities for needy families, many Norcrafters leave their gifts at department collection areas pinpointed by colorful Christmas decorations.

Scheduled during the eight-day holiday vacation are contests on the bowling alleys, golf course, and at Catalina. See the accompanying list of season events.

## FOR THE BOWLERS

Biggest of the three sport activities is the annual NRC all-facilities Christmas Bowling Tournament. Over 1000 entries have been received from Anaheim, El Segundo, Torrance, Radioplane, Palmdale-Edwards, and Hawthorne Norcrafters.

This is twice the participation in last year's bowling tourney.

Schedule for the three-day event was made available early this week and all bowlers signed for the tourney are requested to pick up a copy prior to the holiday vacation.

On the Western Avenue Golf Course, December 26 and 27, Northrop golfers will be driving for honors in the annual NRC Holiday tournament. At stake are merchandise prizes and trophies for over-all low gross and over-all low net scores.

# Holiday

(Continued from Page 1)

day for work which would normally be performed on Tuesday, December 31.

The 40-hour year-end vacation paychecks for both salaried and hourly Norcrafters will be available to department clerks for distribution to personnel as follows: day shift—8 a.m. Tuesday, December 24; night shift—6 p.m. Tuesday, December 24; and morning shift—9 p.m. Monday, December 23.

Paymaster George Forbes announced that paychecks for hourly paid personnel for weeks ending December 22 and 29, and salary paychecks for week ending December 22, will be available as follows: day shift—9 a.m. Saturday, January 4; night shift—9 p.m. Saturday, January 4; and morning shift—9 p.m. Friday, January 3.



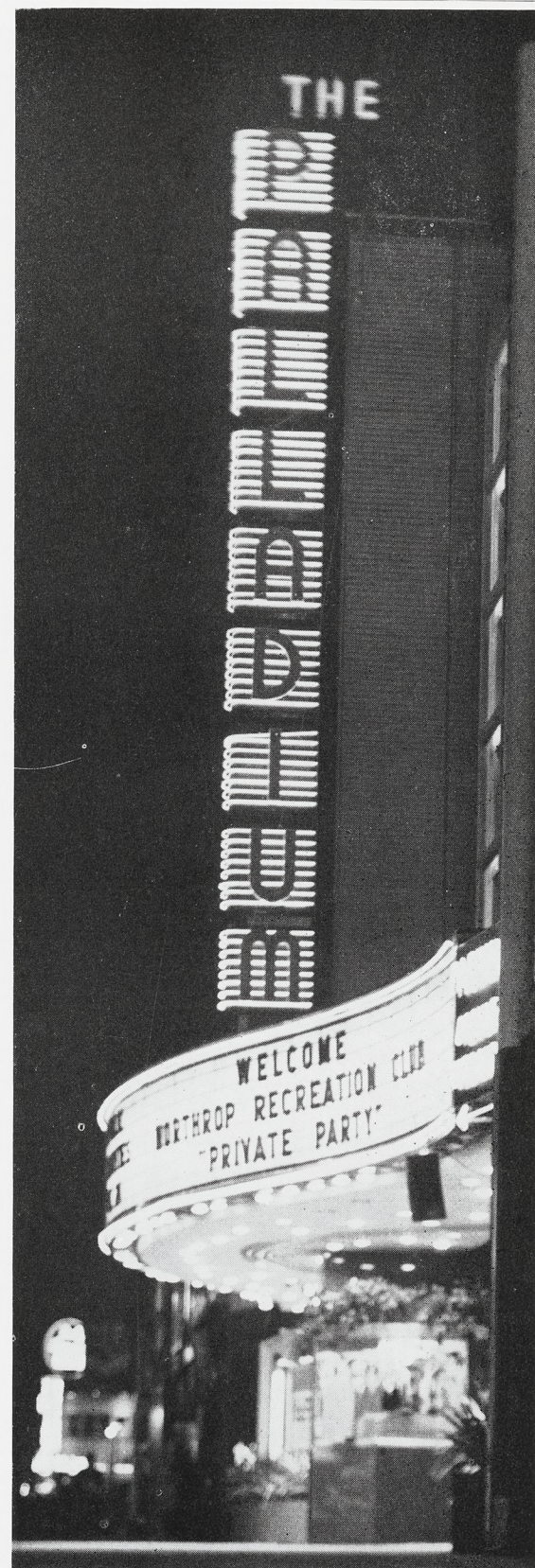
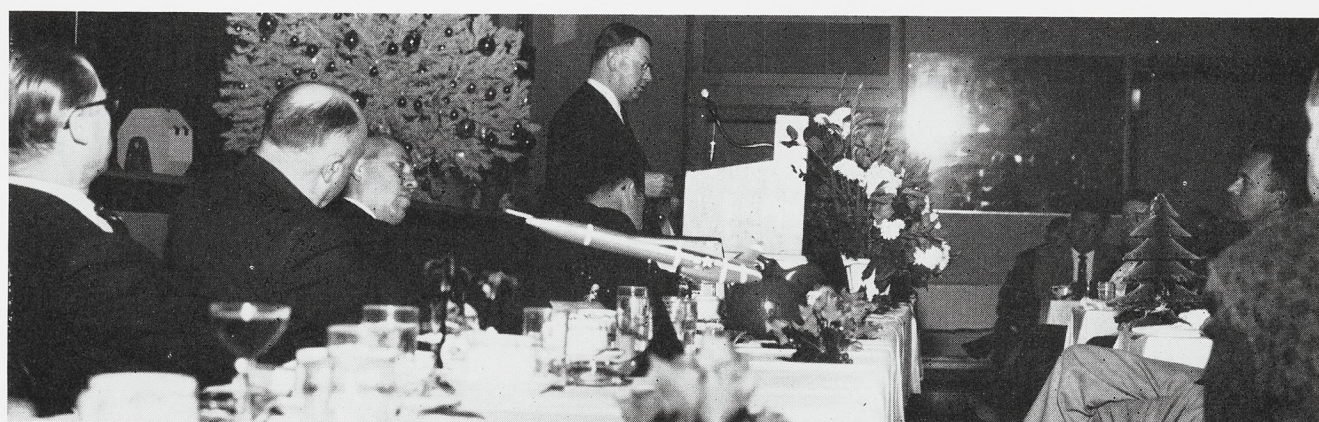
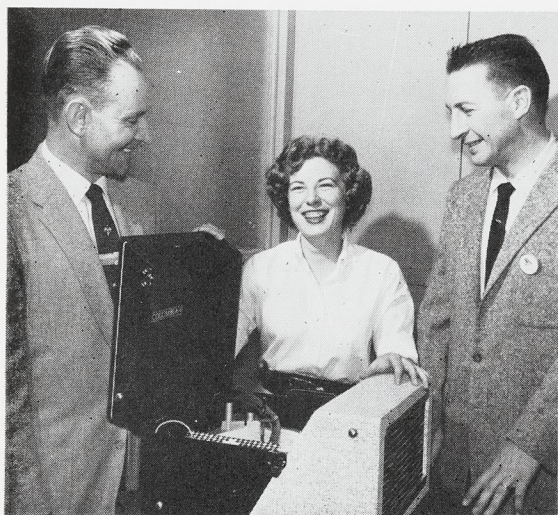




**TRADITIONAL YULE SEASON** — Festivities marked the start of a full schedule of holiday events. (See stories, pages 1 and 5.) Very colorful affair was the annual NRC "Private Party" at the Palladium. Highlight of the evening-long dine and dance party was the award of a color television set door prize to Mr. and Mrs. Eugene E. Conley in photo, right, with NRC Council president Gene Boggess and singer Lee Whitney. The thousands of Norcrafter party-goers cheered the newly wedded couple on their win. Lucky department clerk who won the new Hi-Fi record player was Janet McBride, pictured below with Gene Boggess and NRC special events Chairman Ted White. Merry Christmas all!



## Gala Holiday Parties



**SANTA VISITS** — Northrop Management Club held their annual Christmas party at the Rodger Young. There were presents, acquaintances renewed, good time by all. At left Connie Cordil, Materiel, receives binoculars from Santa. Above, speaker for the evening Wayne Parrish (see News Briefs, Page one) gives newsman's point of view on the defense effort. At right, Club President Al Kendall presents Shark model to Mr. Parrish. Al Cline, Corporate director of Public Relations, instrumental in bringing Mr. Parrish to the club, is at right.





# Colorful New Trademarks For the Northrop Family



New trademarks have been approved for Northrop Aircraft Inc., it has been announced.

Each of the four divisions, and the corporate entity will have their separate emblems.

Reproduced in color at left, the new trademarks provide each of the divisions — Northrop Division, Radioplane, Northrop International, Northronics — and the corporate entity separate identifying emblems. These will be used on stationary items, products, publications and wherever use of the trademark is appropriate.

Changeover to the new trademarks will be effected in an economical way, stated Whitley C. Collins, Northrop president. They will be phased in as current items bearing the old trademark are used up.

They were seen for the first time in the Annual Report and are now being used in all Northrop advertising.

Features of the new trademarks include familiar elements of the original Northrop "triangle and bird" emblem, modified to achieve consistency in design of the emblems and denote the activity of each division.

Royal blue, the principle color used in the trademarks, was chosen because of its symbolic association with aeronautics and related fields.

The triangle of the old trademark was eliminated for the corporate emblem to provide a simple basic device representative of the corporate entity.

The divisional trademarks have a similarity of design incorporating the familiar triangle encircled in royal blue. Retained in the Northrop Division trademark is the "bird" signifying the products produced.

One of the first uses of the Northrop Division trademark can be seen in the Northrop News title block, right.

Radioplane's new emblem contains the representative target missile, superimposed on the Northrop triangle.

To denote the world wide scope of Northrop International operations, the division's trademark includes a globe with the Northrop bird within the triangle.

The Northronics trademark employs the familiar sine wave associated with electronics, principal activity of the new division. Also part of the Northronics trademark is the accompanying statement, "A division of Northrop Aircraft, Inc."

The original Northrop trademark of a triangle and bird in orange and black colors had been in use since the company's founding.

## Snark Grads

**MISSILE AIRMEN** — Graduates of the world's first intercontinental guided missile stand by the Northrop Snark following receipt of diplomas. Among the Northrop and AF officials present were President Whitley C. Collins and Maj. Gen. Alfred Kalberer, keynote speaker. Mr. William Larabee, corporate vice-president, Legal, was master of ceremonies. Trained at Northrop, most of the 105 graduates reported for duty with SAC's first Snark unit.

## NORTHROP

# NEWS BRIEFS

**SPACE VEHICLES** — Northrop is engaged in studies dealing with problems of space flight, reports Welko Gasich, chief Weapons System Development engineer. Studies are being conducted with company funds so that Northrop can take a leading position in the field of astronautics as soon as future plans by the military service are implemented. Problems associated with space flight have lead to studies in many new fields such as aerophysics, astrophysics, and cosmophysics. Studies to date indicate that two major problems confront the designer of manned space vehicles in the fields of propulsion systems and human engineering. Northrop studies in these fields will continue to receive increased emphasis in the future.

**BUSINESS TRIPS**—*Snark, T-38 and other new programs in the past few days were responsible for following business trips: President Whitley C. Collins to Washington and Dayton; Vice-presidents Tom Jones and John Alison to Washington; Vice-presidents George Douglas and Al Morgan to Dayton.*

**COST OF RECURRING REPORTS**—Vice-president and General Manager Robert R. Miller has stated that research into Northrop Division recurring reports indicates yearly costs in that area are a major administrative expense. Records Management has been directed to provide the Division with a reports control program which would eliminate unnecessary reports, uncover duplications and standardize formats.

**DATA AND TECHNOLOGY** — Realignment of Flight elements, announced shortly after the first of the year, is the result of the increasing complexity of missiles and related products. Top objectives of the change are two-fold, stated Robert R. Miller. (1) A consolidation of effort and streamlining of operation. (2) The rapid military-industry shift to the missile-type weapon system with result that data will be more complex and many technological requirements will be added.

**MISSILE ADMINISTRATION** — H. E. "Hap" Herdrich, Snark SM-62 Program administrator: "The objective is—on-schedule production of a modern combat-ready reliable weapons system at the lowest possible cost." Points emphasized strongly to assure program success were—line agency responsibility and accountability for fulfillment of functions; rapid communications on scheduled deficiencies of any kind; solution and correction of deficiencies.

## FEATURE REPORT:

### Northrop in 1957

- \* Headline Events
- \* Record of Progress

See Page 3

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif. Wednesday, January 15, 1958

## Product Surface Quality Stressed

### Collins Heads L.A. Ordnance Association

President Whitley C. Collins has been elected president of the Los Angeles Post of the American Ordnance Association, it was announced last week. Mr. Collins succeeds Patrick Lizza, of Bermet Powder Co., as head of the Association in Los Angeles.

The American Ordnance Association is a society of military and civilian leaders dedicated to the furtherance of industrial preparedness for national defense.

Other Association officers elected included Rea Hopper of Hughes Tool Co., first vice-presi-

### MANUFACTURING EMPHASIZES NEED FOR CARE IN MATERIALS HANDLING

The improvement of materials handling techniques in all phases of manufacturing has become an increasingly more important function of supervision and production personnel, states Richard R. Nolan, vice-president, Manufacturing.

Increased effort is being applied to the proper handling and protection of bonded honeycomb parts, surface skins, complex dent; John B. Rauen, second vice-president; Gordon B. Cray, jr., of E. F. Hutton Co., secretary; and Samuel K. Rindge of the Citizens National Bank, treasurer. Mr. Lizza, retiring president, was elected chairman of the board.

machined fittings and other components.

"Our objective," says Mr. Nolan, "is to achieve and maintain the required high quality of finish and appearance that our engineers and customers have established."

Over the years the costs of aircraft components have increased considerably, he points out. The specified dimensional tolerances and surface finish requirements have contributed to this cost and demand extreme caution during all phases of fabrication and assembly, handling and storage.

An example of the progress (SURFACE QUALITY, Page 2)





## Norcrafters Retirement Plan Hinged to Economy

A new plan for protecting retirement income against inflation has been approved by Northrop shareholders, it was announced by Robert R. Miller, vice-president and general manager.

Called the "balanced retirement income plan", it has been developed to offer Norcrafters greater stability of purchasing power during retirement years than has been previously available under any company-sponsored retirement plan, Mr. Miller stated.

The plan must receive approval of the U. S. Treasury Department and the Department of the Air Force. Application has been made.

Following approval, effective date has been scheduled to be retroactive to August 1, 1957.

In the past, a fixed retirement income resulted in less purchasing power as the cost of living increased. Aim of the new plan is to insure, insofar as possible, a stable standard of living for retired Norcrafters by varying

the number of dollars received.

The variable income will be made possible through investing the variable portion of the Company's contribution in a balanced portfolio of selected securities. These investments will be supervised by an investment board.

Board, recently appointed, consists of Northrop Board of Directors members — Edward W. Carter, chairman; Lloyd L. Austin and Richard W. Millar. Mr. McDuffie and Mr. Collins will serve as ex-officio members.

The improvements adopted are the result of long and serious study by members of Northrop management and experts in the field, and provide a measure of retirement income protection against inflation that has been impossible before this time.

A booklet describing the improved retirement plan in detail is now being prepared.

Call Ed Means, Northrop retirement counselor, station 2679, for complete information.

## Which Paychecks are 1957-? George Forbes Explains All

Two notices of importance to all Norcrafters were issued this week by Northrop Paymaster George Forbes. They concern taxable wages and payroll deductions for state disability insurance benefits.

He pointed out that the Director of Internal Revenue requires that all wages paid to Norcrafters during 1957 must be reported for 1957 income purposes. Regardless of when the money was earned—it if was paid in 1957—it must be reported in the 1957 earnings.

To illustrate how final paychecks affect 1957 and 1958 taxable earnings, Forbes outlined the following:

Hourly paychecks for week ending December 15, which were paid December 20, will be included in 1957 earnings. Also, the 40-hour year-end vacation check paid on December 24 will be included in 1957 earnings. All paychecks paid January 2, 1958, and thereafter will be recorded as earnings for 1958.

Salary paychecks for week ending December 15 and week ending December 29, paid December 20 and 24, respectively, will be included as 1957 earnings. Salary paychecks paid January 2 and thereafter will be recorded as earnings for 1958.

Report of wages and income

## Income Tax For 1958 Calls For More Personal Records

A change in income tax return filing procedure in regard to expense accounts and mileage expenses has been announced by the Internal Revenue Service.

For the year 1958 all individuals who incur expenses in connection with their employment must be able to produce information about these expenses from their own personal records.

In keeping with this ruling persons receiving, from their employers, reimbursement for expenses or allowances for expenses must report such payments as "wages or compensation" on Form 1040, U. S. Individual Tax Return.

A new line is being added to use for deduction of actual reimbursed expenses and expenses qualifying within the Internal Revenue Service definition of "travel expenses".

In order that Northrop employees may meet this requirement of the Internal Revenue Service, it is recommended by the company that each person prepare his expense accounts and mileage reports in duplicate. He should then retain the duplicate copy for his personal file.

Copies of receipted bills used to support expense accounts should also be maintained by employees.

tax deductions on 1957 earnings, W-2 Form, will be available for distribution to all Norcrafters today, Forbes stated.

To meet the additional cost, the California Department of Employment has increased the amount upon which employee contributions will be based, Forbes stated.

He said that effective January 1, employee contributions will be one per cent of the first \$3600 of annual wages paid instead of the first \$3000. The base has been increased from \$3000 to \$3600.

### BLOOD MOBILE HERE JAN. 21

The call is out for Norcrafters blood donors. The Blood Mobile will visit here January 21 and registrations are being accepted from Plant I and II and Engineering Center personnel.

In order to accommodate Norcrafters, the bank must be maintained at a certain level. This month's drive is planned to bring the bank's level within a safe margin.

More than 1200 pints of blood were used by Norcrafters and their families from June, 1956, to June, 1957, representing a saving of over \$30,000.

## First Appointments Mark New Year

### Donald Lewis To Nortronics Finance Post

### Timberlake Vice-President Organization

### Robinson New Assistant for International

Nortronics Division has announced the establishment of the office of Division Treasurer and the appointment of Donald L. Lewis to head the new office.

Nortronics vice-president and general manager, Dr. William F. Ballhaus, stated that the division treasurer will be responsible for the financial functions of the entire division including those performed at the Electronic Systems and Equipment Division and the Systems Support Division.

In the announcement outlining Nortronics' accounting and financial responsibilities, Dr. Ballhaus stated that transfer of the functions of the treasurer's office from Northrop Division to Nortronics will be accomplished over a period of several months.

The Northrop Division will

General Patrick W. Timberlake, corporate vice-president, has been appointed vice-president, Organization, for Northrop, it was announced by Whitley C. Collins, president.

In this new post, General Timberlake is responsible for procedures and organizational plans concerning the corporation and its divisions, Mr. Collins said.



His task will be to insure maximum economy in the utilization of all Northrop resources.

General Timberlake will also assist the other corporate officers on procedural and organizational matters related to their respective functions.

Nortronics' treasurer, Don Lewis served as assistant to Dan Hill, Northrop Division treasurer. He joined the Northrop organization as controller for Radioplane early in 1956.



furnish accounting services until the time that these functions are transferred to Nortronics.

Prior to his appointment as

## Surface Quality Stressed

(Continued from Page 1)

being made in the stepped-up program is offered by work on the current Boeing 707 and KC-135 projects.

Ole Omley, Boeing projects superintendent, stated that special methods have been adopted to meet the particular requirements for protecting the outside surface skins for commercial aircraft.

Parts for the Boeing 707 are even protected from sources of discoloration that may adversely affect the appearance of the final unpainted surfaces. Constant vigilance is maintained to be certain that only approved solutions, processes and materials come in contact with these parts, he said.

Honeycomb damage on all projects has been reduced by a large percentage as a result of new sheet aluminum protectors now in use. The .064 sheet aluminum panels are attached to the exterior surfaces of the honeycomb parts at the bond shop and remain attached until shipment of the final assembly.

Also, a Boeing recommended plastic coating is applied to exterior surfaces to protect them from scratches and scuff marks during manufacture. This coating goes on at the earliest possible stage, even at the vendors in some cases.

Omley pointed out that every possible source of ideas is being exploited to improve materials handling methods. During the program, a standard countersink tool was redesigned to eliminate

scratches which normally occur when counter-sinking surface skins. He indicated that this tool could be used throughout the industry.

Other new means employed to insure high quality include heavy paper corner protectors to eliminate scratches on skin surfaces, and handling tools.

According to Jim Hess, conservation coordinator for materials handling, specially designed light-weight aluminum carts with five padded shelves provide safe and easy loading and transporting of long, delicate honeycomb bonded parts. Open and center support construction eliminates scratches and damage formerly caused by corner posts of standard design carts.

Omley describes materials handling and protection of delicate parts as a "total responsibility". He emphasizes that everyone must follow prescribed and proven methods during all phases of a project in order to achieve highest possible quality.



Gwynn H. Robinson, industrial export specialist, has been appointed assistant to J. Gil Nettleton, vice-president and general manager of Northrop International, the company's overseas marketing division.

Mr. Robinson was export manager for Rochester Ropes, Inc., of New York, following his release from the Air Force in 1945, and later served as manager of overseas trade for the Mathieson Chemical Corporation. He is a former managing partner of Feldt and Robinson, independent oil producers in Colorado.

A native of New York City, he attended Massachusetts Institute of Technology where he majored in business administration. He entered the U. S. Army Air Corps in 1941 as an air cadet and was awarded his wings in August, 1942.

He was awarded the Distinguished Flying Cross for air combat missions over Italy during World War II.

Mr. Robinson was recalled to active duty with the Air Force in 1951 and was assigned to the programming staff of Headquarters, United States Air Forces in Europe.

### TV SHOW AIDS BOWMAN HUNT

A private investigator has been engaged to help locate Tommy Bowman, son of Norcrafters Eldon Bowman, missing since March, 1957. (See Northrop News, April 10, 1957.)

NBC Television's "Queen For A Day" program hired the investigator following Mrs. Bowman's request when she appeared on the show January 10.

In addition to the \$1000 reward offered by Northrop, the program has put up a \$500 reward for anyone supplying information leading to the location of the boy.

# Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 8

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# NORTHROP IN 1957

Some of the most dramatic events in the history of world aviation were chronicled in 1957.

For the nation's aircraft industry it was a year of dynamic evolution, wrought by the changing pattern of defense needs in an era of nuclear armed intercontinental missiles and supersonic aircraft.

Headliner of the Northrop year was the Snark. A 73-million dollar order for America's first proven intercontinental missile was placed by the Air Force in the summer of 1957. This first production order was followed later in the year by a 70-million dollar letter of intent order.

**Snark was proclaimed operational with the Air Force announcement that it would activate its first Snark unit as part of the free world's mightiest defensive arm—the Strategic Air Command.**

As a prelude to historic graduation ceremonies of 105 missile airmen trained at Northrop to man the Snark unit, the Air Force disclosed location of the first Snark base—Presque Isle, Maine.

Now at Patrick AFB, Florida, the nation's giant missile test center, the 105 graduates and other selected airmen are maintaining an operational capability while continuing combat readiness training. Working hand-in-hand with the airmen is a group

of any type to land on a frozen sea.

The perfect landing and take-off which followed were made on the 48-inch thick ice sheet of North Star Bay a few miles from

participation in the U.S. Army Hawk missile program, production of major components for several important aircraft—the Boeing KC-135 strato-tanker and 707 model commercial jet air-

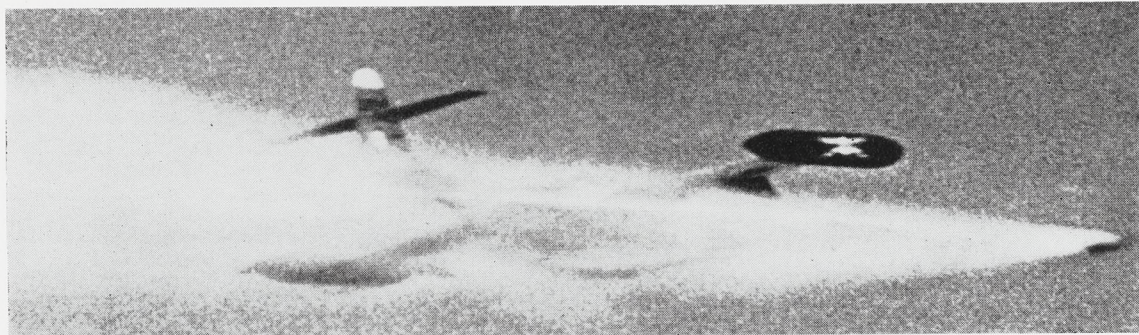


Thule in spring of 1957. The successful test, made without skis or other special equipment, demonstrated an increased operating potential for defense in Arctic regions.

Outstanding progress in the

liner, the McDonnell F-101 Voodoo fighter and F-4H Navy fighter.

A major refinement in the corporate structure of Northrop took place in early 1957. Principal steps in the realignment were



of Northrop proficiency training specialists assigned to Patrick in October of 1957.

**Dramatic proof of the Snark's true intercontinental capability was disclosed to the world in October when the Snark demonstrated ability to place a nuclear warhead on any target in the world. In a record-breaking 5000-mile flight from the Cape Canaveral missile test site in Florida to Ascension Island in the South Atlantic, the Snark flashed toward its target at near-sonic velocity and delivered its simulated hydrogen warhead with unerring accuracy.**

While the Snark made new headlines as a powerful deterrent to enemy aggression, the famed Northrop F-89 Scorpion added an awesome new dimension to air defense.

**A sky-ripping atomic explosion over the Nevada desert on July 19 was unleashed from a USAF Northrop-built Scorpion for history's first firing of an air-to-air atomic weapon. In a single instant, the concepts of air-to-air warfare were revolutionized—a development termed the most important advance since radar.**

From the land of eternal ice came the news of still an earlier Scorpion accomplishment. An F-89D interceptor of the 74th Fighter Interceptor Squadron at Thule Air Base, Greenland, became the first known jet airplane

development of the Northrop T-38 supersonic trainer and the new N-156F twin-jet counter air fighter was recorded in 1957.

**These new airplanes are the first members of an entirely new family of advanced light-weight, high-performance military aircraft embodying Northrop's dollar engineering "design for simplicity" concept.**

Leading military aviation officials at home and abroad focused considerable interest in these new Northrop projects designed to meet specific defense needs of the free world.

Other Northrop contributions during the eventful year include

creation of an overall corporate organization and establishment of company operations under a line division structure.

The Northrop facility at Hawthorne and its supporting installations were designated the Northrop Division. A new division named Northrop International was established to handle all overseas programs of the company.

Radioplane Company, formerly a wholly-owned subsidiary, was merged into the corporation as a line division known as Radioplane, a division of Northrop Aircraft, Inc.

**A fourth division called Nortronics was created to**



## RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 4)  
TWEEDY & ANNETTA, South Gate. LE-  
LAND CROWSON (5504-20429, Ext. 2634). LO 7-8374. 2-4

(Zone 8)  
PACIFIC COAST HWY. & CALLE MAYOR, Torrance. JOHN LOFY (5222-17037, Ext. 1878). FR 5-9676. 2-8

(Zone 9)  
FIRMONA & 159TH ST., Lawndale. HELEN MAUPIN (5503-19106, Ext. 2681). 2-8

(Zone 14)  
PICO & CRENSHAW, Los Angeles. (Car pool considered.) THOMAS C. MORGAN (5503-18759, Ext. 2681). AX 1-9604. 2-14

7:30 a.m. — 4:15 p.m.

(Zone 4)  
FIRESTONE & LAKEWOOD, Downey. CHARLOTTE COLLINS (9542-46179, Ext. 2228). 3-4

(Zone 5)  
WOODRUFF & DEL AMO, Lakewood. GROVER JONES (5262-53615, Ext. 2318). TO 6-2806. 3-5

PALO VERDE OR STUDEBAKER & STEARNS, Long Beach. (Can take 3 members for existing car pool.) JOHN SOLTES (1810-43945, Ext. 2675). GE 1-0313. 3-5

BIOLA & ROSECRANS, La Mirada. BARTON THOMAS (5940-49036, Ext. 2661). LA 1-1825. 3-5

WOODRUFF & DEL AMO, Lakewood. G. Q. JONES (5262-53615, Ext. 2318). TO 6-2806. 3-5

CARSON & STUDEBAKER RD., Long Beach. (Car pool considered.) PATRICIA McMANUS (5980-34811, Ext. 1755). HA 9-7888. 3-5

KNOTT & CRESCENT, Buena Park. (Members wanted for car pool; have parking pass.) JACK P. TRANT (5120-50170, Ext. 1904). JA 7-0132. 3-5

(Zone 6)  
GLENDDORA & 2ND ST., Long Beach. (Car pool desired.) DANIEL SCHEICK (5110-54818, Ext. 1420). GE 3-1597. 3-6

(Zone 7)  
CARSON & AVALON, Torrance. (Ride wanted after Feb. 15.) SYLVIA HART (1310-41792, Ext. 1801). 3-7

(Zone 9)  
HAWTHORNE BLVD. & 164TH ST., Lawndale. MAUREEN STAINBROOK (5120-45079, Ext. 1375). 3-9

INGLEWOOD AVE. & REDONDO BEACH BLVD., Redondo Beach. BEVERLY ZEPE-DA (1421-47087, Ext. 691). FR 6-6836. 3-9

(Zone 10)  
PACIFIC COAST HWY. & 190TH ST., Redondo Beach. VERA RIDEOUT (8920-27694, Ext. 1564). 3-10

(Zone 12)  
MANCHESTER & SEPULVEDA, Los Angeles. SUZANNE DALTON (5120-53206, Ext. 701). OR 4-0441. 3-12

(Zone 13)  
EMERSON AVE. & MANCHESTER, L.A. 45. BEATRICE SHAMBURGER (1400-22792, Ext. 2113). OR 1-4906. 3-13

SEPULVEDA & CULVER BLVD., Culver City. E. D. PEDEN (8930-15664, Ext. 2773). 3-13

(Zone 14)  
LA CIENEGA & VENICE, Los Angeles. J. A. SPECTER (5238-52241, Ext. 766). VE 9-0788. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 4)  
BUDLONG & 122ND ST., Los Angeles. E. GOTO (3315-44064, Ext. 619). PL 7-2774. 5-4

handle the company's growing activity in the design, development and manufacture of electronic, electro-mechanical and opto-mechanical products and components.

The new corporate framework was designed to improve the operating efficiency of the company, combining the advantages of a large organization with those of smaller, closely-knit units with individual managements.

Progress in another area also marked the year 1957. Completed and occupied was the ultra-modern science and engineering building of the Northrop Division. This multi-million dollar project is regarded as one of the most advanced in the nation and houses nearly 3000 Northrop scientists and engineers.

## RIDES WANTED

8:00 a.m. — 4:45 p.m.

(Zone 5)  
WOODRUFF & CANDLEWOOD, Lakewood. (Need additional drivers for existing pool; have parking pass.) JIM GREENOUX (3475-25209, Ext. 624). TO 6-5703. 5-5

ORANGE & DEL AMO, Long Beach. (Car pool desired.) W. H. COVERT (1500-31601, Ext. 2041). GA 3-1363. 5-5

(Zone 8)  
SEPULVEDA & P.V. DRIVE, Torrance. (Southwood tract.) WALT COOK (3839-15222, Ext. 1592). FR 9-0179. 5-8

(Zone 10)  
HERMOSA AVE. & 17TH ST., Hermosa Beach. (Ride urgently needed.) ROSEMARY PENNY (3120-48588, Ext. 25351). FR 2-0625. 5-10

(Zone 13)  
SEPULVEDA & SAWTELLE, Culver City. (Need driver for existing car pool; have pass.) SY PICKER (3130-25074, Ext. 1555). EX 8-0330. 5-13

4:45 p.m. — 1:15 a.m.

(Zone 3)  
VALLEY & VINELAND AVE., La Puente. (Car pool desired.) ANNE UNKS (5564-23566, Ext. 1215). ED 7-8918. 8-3

3:45 p.m. — 1:15 a.m.

(Zone 14)  
PICO & CRENSHAW, Los Angeles. FRANK KOCH (5503-16458, Ext. 2434). 8-14

## RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 2)  
N. FIGUEROA & AVE. 59, Los Angeles. (Have room for 2 riders; have stall.) MARTIN M. CARMAN (5564-21900, Ext. 555). CL 6-5685. 12-2

(Zone 5)  
ROSECRANS & STUDEBAKER RD., Norwalk. PAT DEY (5352-31558, Ext. 1651). UN 3-0163. 12-5

WOODRUFF & DEL AMO, Lakewood. (Can take 3 riders.) P. H. MAURER (5421-15210, Ext. 1856). 12-5

BALL ROAD & MAGNOLIA, Anaheim. E. F. LAWSON (7733-26980, Ext. 2029). JA 7-8216. 12-5

(Zone 14)  
PICO & CRENSHAW, Los Angeles. (Car pool considered.) THOMAS C. MORGAN (5503-18759, Ext. 2681). AX 1-9604. 12-14

7:30 a.m. — 4:15 p.m.

(Zone 5)  
KNOTT & CRESCENT, Buena Park. (Members wanted for car pool; have parking pass.) JACK P. TRANT (5120-50170, Ext. 1904). JA 7-0132. 13-5

CARSON & STUDEBAKER RD., Long Beach. (Car pool considered.) PATRICIA McMANUS (5980-34811, Ext. 1755). HA 9-7888. 13-5

PALO VERDE OR STUDEBAKER & STEARNS, Long Beach. (Can take 3 members for existing car pool.) JOHN SOLTES (1810-43945, Ext. 2675). GE 1-0313. 13-5

(Zone 6)  
GLENDDORA & 2ND ST., Long Beach. (Car pool desired.) DANIEL SCHEICK (5110-54818, Ext. 1420). GE 3-1597. 13-6

(Zone 10)  
HWY. 101 & PIER AVE., Hermosa Beach. (Via Manhattan, Lawndale, Prairie.) C. F. MONIZ (5143-43550, Ext. 663). FR 6-0734. 13-10

8:00 a.m. — 4:45 p.m.

(Zone 5)  
WOODRUFF & CANDLEWOOD, Lakewood. (Need additional drivers for existing pool; have parking pass.) JIM GREENOUX (3475-25209, Ext. 624). TO 6-5703. 15-5

ORANGE & DEL AMO, Long Beach. (Car pool desired.) W. H. COVERT (1500-31601, Ext. 2041). GA 3-1363. 15-5

(Zone 11)  
INGLEWOOD & 134TH ST., Hawthorne. P. F. CHRISTOPHER (3533-31255, Ext. 2261). 15-11

(Zone 13)  
SEPULVEDA & SAWTELLE, Culver City. (Need driver for existing car pool; have pass.) SY PICKER (3130-25074, Ext. 1555). EX 8-0330. 15-13

4:45 p.m. — 1:15 a.m.

(Zone 3)  
VALLEY & VINELAND AVE., La Puente. (Car pool desired.) ANNE UNKS (5564-23566, Ext. 1215). ED 7-8918. 18-3

## Miscellaneous — Split Shift

(Zone 5)  
DEL AMO & DOWNEY, Lakewood. T. L. REEVE (5325-25730, Ext. 1275). ME 0-1364. 20-5



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday following publication.

## FOR SALE

TRIUMPH, 1954 TR-2, new tires, \$1700. AX 4-7356. A  
GOLF SET, matched irons, woods, \$25. TE 2-8462. A  
HI-FI EQUIPMENT, Utah Cordett speaker system. FR 6-4239. A  
CHEVROLET, 1950 sports coupe, \$250. OS 6-6604. A  
JAGUAR, 1953 XK120M hardtop coupe, OS 5-7831. A  
FORD, 1948 sedan, \$100. Box 820. A  
STUDEBAKER, 1951 4-door Champion, OS 5-7314. A  
BABY CRIB, w/mattress, \$25. OR 1-9274. A  
MOTOR SCOOTER, 1953 Cushman, \$125. OS 5-6792. A  
AIR RIFLE, .22 cal. hand pump. PL 2-9597. A  
DIAMOND RING, center stone, 22 surrounding stones, mounted in white gold, \$285. FR 6-8575. A  
AQUARIUM, 3 10 gal. tanks, fish, pumps, filters, \$12. Box 815. A  
HIDE-A-BED, \$100. Box 817. A  
TABLE LAMP, Eastern hard rock maple, 2 "what-not" wall pieces, \$30. FR 6-8575. A  
CHEVROLET, 1949, \$195. PL 7-2719. A  
LAUNDRY ROOM FIXTURES, sink, cabinet, \$15. FR 5-8536. A  
HOUSE, 3-bedroom, dining room, breakfast bar, carpet, drapes, disposal, double garage, intercom, G.I., \$82 mo. less G.I. exemption, \$12,800. TW 3-0339. A  
CHEVROLET, 1946 2-door, 3/4 race 1953 engine. DA 9-1019. A  
BUICK, 1950 Special, \$225. DA 3-6954. A  
PUPPIES, German Shepherd, AKC, imported sire. FR 6-0892. A  
JAGUAR, 1952 XK120 roadster, new batteries, \$1400. FR 3-3128. A  
FORD, 1933, 3-window coupe, hydraulic brakes, full house '49 Ford V-8 engine, no paint, 1940 dashboard, battery charger, \$350 or \$200 for engine, \$150 for body. FR 9-9632. A  
BASSET PUPPIES, registered, born 12/14/57, \$150. VE 9-5416. A  
CHEVROLET, 1956 convertible, full power, \$1695. WE 6-0953. A  
FORD, 1953 tudor, 6, overdrive, needs motor work & tires, \$450. FR 9-8500. A  
MOVIE CAMERA, Revere 88, 8 mm, case, portrait lens, filter, \$30. GL 4-2451. A  
RUGS, w/pads, multi-colored, hand-loomed, 9 1/2 x 14, \$125 each, both for \$200. FR 6-8575. A  
PISTOL, H&R 22, 4" barrel, holster, \$25. FR 9-3128. A  
PACKARD, 1951, 200 4-door, terms, TO 6-3349. A  
CEDAR CHEST, modern limed oak, \$50. PL 6-0015. A  
CHEVROLET, 1947 2-door sedan, \$100. EX 8-4555. A  
AIRPLANE, 1947 Bellanca, 150 h.p., 70 hrs. smoh, rebuilt accessories, new fab, glass, battery, extra instruments, hanged, perm. license, misc. maint. equip. and parts, \$4200. AX 3-4934. A  
ROLL-A-WAY BED, 30", mattress, \$10. GR 7-1539. A  
LINCOLN, 1951 Cosmopolitan 4-door sedan, new w-w tires, \$275, consider trade-in. PL 7-2719. A  
CADILLAC, 1950 4-door, take contract, \$745. PR 2-3696. A  
HOUSE TRAILER, 19' eastern built masonry, butane stove & light, equipped for electricity, electric brakes, \$400. OR 2-2352. A  
FORD, 1956 Country Sedan 9-passenger station wagon, T-bird engine, power steering, brakes, air conditioner, new battery & brakes, terms on equity. JA 7-8309. A  
BLUE PRINT MANUAL, beginner's. Box 813. A  
LADIES SUITS, 2, size 12, \$25. Box 814. A  
STOVE, O'Keefe & Merritt table top, grill, clock timer, \$40. AX 5-2375. A  
REFRIGERATOR, Servel gas, 10 years old, good working condition, \$45. Box 811. A  
SHOPSMITH, standard equipment plus jointer, \$290. DA 4-6827. A  
DODGE, 1935 coupe, \$50. OR 1-2930. A  
TRUMPET, Oxford, w/case. FR 9-2333. A  
MOTORCYCLE, 1950 B.S.A. Golden Flash 650 c.c., new tire, tubes, just overhauled, \$300. FR 9-3093. A  
RADIO-PHONO-TV, Sylvania combination, OR 1-2149. A  
PUPPIES, Great Dane, papers. FR 2-3092. A  
MOTORCYCLE, 1957 Matchless twin, 600 c.c., \$695. OR 1-1660. A  
WASHER, 1952 Kenmore automatic, \$25. DA 6-1160. A  
LOOMS, benches, assorted yarns & thread. CI 3-3075. A  
CLUB CHAIR & ottoman, red naugahyde, modern, \$45. Box 810. A

## FOR SALE

RACING BICYCLE, boy's light-weight 28", 3-speed, spot light, nickel fenders, hand brakes, \$50. Box 803. A  
VIC TANNY MEMBERSHIP, 8 months. OR 2-4523. A  
FORD, 1952, nosed, decked, customized, painted recently, 1953 Mercury engine, full race cam, \$550 or take over payments, \$21.75 mo. NE 8-1076. A  
ROTISSERIE, \$10. DA 3-3621. A  
PORTABLE RADIO, Hallcrafters AC-DC, 25 watt output, 4 bands, 8 tubes, telescope & loop antenna, \$50. PO 1-9269. A  
CABIN CRUISER, 16', 57 Evinrude 35 h.p. electric starter, glass bottom, trailer, winch, tarps, extras, 7 mo. old, \$1295. GR 9-1510. A  
PRE-AMP TUNER, AM-FM, Espey, \$45. OS 5-0674. A  
RECEIVER, Heath all-band communication type. Box 802. A  
MOVIE PROJECTOR, Universal 8mm, \$50. LO 6-1798. A  
BABY FURNITURE, bed, play pen, small red rug. DA 3-4990. A  
BICYCLE, boy's 20", \$15. GA 3-1363. A  
BOSTON TERRIERS, pedigree, AKC, good with children, OS 5-9695. A  
SHOTGUN, J. C. Higgins automatic, 12 ga., \$87.50. FA 8-5365. A  
RIFLE, Weatherby 220 Swift, 8X Bushnell scope on Buheler mounts, \$175. FA 8-4416. A  
GAS RANGE, full size. FA 8-3306. A  
DINING TABLE, 58"x34", 6 chairs, 2 leaves, pad, walnut, \$75. PL 5-2507. A  
RANGE, Western Holly gas, broiler, light, 26"x36", \$30. OS 6-8444. A  
HOUSE, Morningside Park, 2-bedroom, covered patio, bba, double garage, rumpus room, \$19,500, terms. PL 5-0752, mornings. A  
NEEDLE, diamond-sapphire, Sonotone ceramic cartridge, \$10. TE 0-5139. A  
REFRIGERATOR, 1949 G.E., \$65. FR 5-8794. A  
BABY FURNITURE, carriage, \$5; stroller, \$6; jumper chair, \$2. OS 6-2677. A  
DALMATION, AKC registered, 2 year old male, \$25. GL 4-2451. A  
TELESCOPE MIRROR, 8", needs aluminizing, corrected to quarter wave, \$60. Box 801. A  
HEIGHT GAGE, 12" Starret, never used, \$65. LU 2-2120. A  
JAPANESE CHINA & genuine cut glass, miscellaneous. FR 4-6771. A  
MATTRESS, inner spring, matching box springs, \$25. OS 5-4827. A  
CADILLAC, 1954 62, power steering, brakes, \$2500. Box 805. A  
TRAILER, heavy duty 2-wheel, bed 4'x7', high side boards, tarp, extra tires. Box 804. A  
FORD, 1947 4-door sedan, new brakes, \$125. RI 8-4858. A  
ELECTRIC STOVE, Frigidaire, used 1 year, deep well cooker, high broiler, timer, \$200. Box 808. A  
PROPERTY, twin lots, Big Bear area, \$790, \$100 down, \$15 mo. Box 807. A  
ENLARGER, 4x5 Federal condenser, octar coated enlarging lens, diaphragm click stops, printing easel, never used, \$100. FR 7-2200. A  
GAS HEATER, small, w/hose, \$2.50. DA 4-4750. A  
SHOTGUN, Stevens 12 gauge double, \$35. DA 9-5437. A  
TV, Majestic 20", \$55. FR 9-3179. A  
WASHER, ABC Spinner, \$15. FA 8-6417. A  
STOVE, 36" Wedgewood gas, light, clock, timer, simmer burners, 2 years old, \$100. PL 6-5694. A  
PIANO, Wurlitzer Strad, 52" high, \$190. AX 3-0746. A  
STOVE, Roper gas, 41"x27", table top w/cover, \$50. FR 5-8778. A  
FRIGIDAIRE, 6 cu.ft. apt. size, G.M., \$50. Box 809. A  
ROLL-A-WAY BED, 3/4, mattress if wanted, \$20. DA 3-5449. A  
ACCORDION, Scandelia, 7 treble shift, 2 base shift, case, music stand, \$375, terms. OR 2-4523. A  
FURNITURE, 21" table model TV, dinette set, floor lamp, odd chairs. PL 4-2726. A  
MOTORCYCLE, 1956 Triumph Tiger Cub, 200 cc, \$400. ME 3-3500. A  
BEDS, twin Hollywood, metal frames, used 1 month, \$100. AX 4-1387. A  
REFRIGERATOR, 7 cu.ft. Frigidaire, \$40. Box 818. A  
TRAILER, 4'x6' 2-wheel metal, w/sides, chrome disks, \$75. OS 6-8760. A  
FURNACE, 25,000 BTU, dual. OS 6-6449. A  
OLDSMOBILE, 1956 Super 88 convertible, full power, \$2375. DA 3-5725. A  
STUDEBAKER, 1953 V-8 sport coupe, overdrive, new engine, must sell. OS 5-7924. A

## FOR SALE

JR. DINING ROOM SET, Chinese, 4 chairs, buffet, \$135. OR 7-3551. A  
RECORDS, 33 1/3 lp, classical & semi classical. FR 9-0706. A  
BOX SPRING, double size, 6 wooden legs, inner spring mattress. OS 6-6021. A  
STOVE, Roper 6-burner gas, oven & broiler oven, \$50. FR 4-5411. A  
CEMETERY LOTS, Inglewood Park, doubles. DA 9-5617. A  
FORD PARTS, 1934 pick-up, radiator shell, hood, dash, engine, others. PL 4-4384. A  
LAWN MOWER, Craftsman rotary, 2 1/2 h.p., side ejector, 19" blade. OR 4-5650. A  
PARAKEETS, 2, w/cage, \$2. OS 6-6074. A  
RADIO-PHONO comb., Spartan, bleached mahogany, 78 rpm, AM, \$35. OR 7-8775. A  
MG, 1952 TD, new tires, extras. must sell. Box 824. A  
GUITAR, elec. steel. Rickenbacher. \$35. OS 5-0674. A  
STOVE, 1957 Kenmore, used 4 months, \$100. PR 4-2967. A  
BEDROOM SET, 3-pc. Italian Provincial. FA 1-3548. A  
TV, Westinghouse 21" table model, \$40. DA 3-6658. A  
WASHER, Westinghouse automatic, \$40. AX 3-0578. A  
FORD, 1956 conv., Ford-O-Matic, new top, tires, tonneau cover, \$1695. PL 4-1596. A  
BOAT 14' fiberglass 1955 Wizard Holiday, 30 h.p. Scott Atwater, electric start, remote controls, windshield, trailer, battery charger, skis, \$1395. FR 9-7476. A  
POODLE, AKC, miniature, black, female, champion stock. OR 1-2470. A  
DODGE, 1952 4-door gyro, \$395. Box 823. A  
BOAT, 18' Weldwood inboard, sweep down windshield, jeep marine motor, trailer, used 6 hrs., \$600. EX 1-4559. A  
VACUUM CLEANER, Kirby, attachments, floor polisher, \$75. OS 6-4851. A  
HOME STUDY COURSE, radio, TV, electronics, National Schools, includes pamphlets, ohm meter multi-tester, radio, head phones, assorted parts, \$50. FR 2-8019. A  
CHEVROLET, 1949 2-door, \$125. GA 2-8533. A  
REFRIGERATOR, 1954 Hotpoint. DA 3-4990. A  
STUDEBAKER, 1955 sport coupe, power steering, auto. transmission, 4-throat carb., duals. UN 3-3075. A  
BUICK, 1947. FA 1-2284. A  
HOUSE, 3-bedroom, 1 1/2 bath, G.I. resale, built-in stove & oven, carpet, drapes, landscaped, Pacific Coast Hwy. & Crenshaw, \$18,750, \$3000 down. DA 6-1154. A  
SKIN DIVING EQUIPMENT, complete set, lung, guns, rubber suit, \$100. FR 9-9888. A  
TRAILER-HITCH, U-Neek balanced action, \$60. UN 8-2795 before 3:30 p.m. A  
OLDSMOBILE, 1953 4-door 88, \$750. NE 1-6783. A  
FORD PICK-UP, 1938, 1940 Mercury engine, \$150. FR 4-4501. A  
HOUSE, 4-bedroom frame, carpet, disposal, 50'x220' lot, \$750 down. \$10,950. PL 7-2719. A  
TV, 17" Motorola, w/revolving stand, mahogany, 2 years old, \$50. Box 821. A  
HOUSE, 2-bedroom, near Northrop, low down. DA 3-6382. A  
STUDEBAKER, semi-customized 1953 Champion Regal club coupe, overdrive, Edmunds dual intake manifold, new 14 coat lacquer paint, \$750. PL 5-3571. A  
OLDSMOBILE, 1957, full power. KE 5-9835. A  
CAMERA, Ricoh 500, F2.8 lens, 135 mm, never used, case, flash attachment, \$70. EX 8-7369. A  
SECTIONAL, near new 2-piece, foam rubber, brown, \$200. PL 6-5941. A  
SPINNER HUBCAPS, set, for 1956 Olds, 15", \$20. FR 5-3894. A  
CHEVROLET, 1951 sedan Deluxe, \$350. OS 6-9991. A  
PISTOL, 45 A.C.P. gov't. model auto, \$35. TE 5-5924. A  
FORD, 1957 Fairlane 500 hardtop, power steering, take over payments. OS 6-2361. A  
CAMERA, Canon SV F1:8 Serenar lens, telephoto, wide angle, B II flash, holder, Norwood director exposure meter, view finders, \$170. RE 1-2964. A  
VOLKSWAGEN, 1956 hardtop, quad pipe Abarth muffler, many extras, must sell. TE 5-4874. A  
HOUSE PAINT, outside, 5 gallons, oxide red, \$20. DA 4-6946. A  
PACKARD, 1952 club coupe, auto, transmission, new brakes, \$400. HO 5-1380. A  
TRIUMPH, 1956 TR-3, \$2075. FR 2-1508. A  
HILLMAN, 1953, \$650. DA 9-9407. A  
LAWN MOWER, manual, Sears Craftsman 20", 1 year old, \$18. FR 7-1844. A  
HOUSE, 3-bedroom, den, Norwalk, carpet, fenced, fireplace, built-in range & oven, auto. washer, refrigerator, disposal, patio, garage, \$17,000, \$500 down. DA 3-6152. A  
CHEVROLET, 1940, new battery. OS 6-8371. A  
OLDSMOBILE, 1951, electric windows, new tires, Hydra-Matic. AX 5-3196. A  
HOUSE, 2-bedroom, dbl. garage, rumpus room, covered patio, bar-b-q, Morningside Park, \$19,000. PL 5-0752, mornings. A

# State Disability Benefits Stepped-Up In January

State Disability Insurance benefits were increased in a graduated scale to a maximum of \$50.00 per week effective January 1, 1958, it was announced by Bill Waldon, Northrop Division insurance supervisor.

He said that the Prudential Insurance Company, carrier of the voluntary plan which covers Northrop personnel, has changed the voluntary plan to conform to the revised State Disability Insurance laws.

Reproduced at right is the graduated benefit schedule with the maximum of \$50.00.

## FOR SALE

REFRIGERATOR, Gibson apt. size, \$40. DA 9-2654. A  
HEADBOARD, for 39" bed, green plastic upholstery. OS 6-9637. A  
SNOW TIRE & TUBE, 6.70x15 knobby tire, mounted on wheel, never used, \$18. EX 8-5201. A  
SEWING MACHINE, Kenmore electric, console, mahogany cabinet, \$30. PR 4-2447. A  
APARTMENTS, tri-plex at beach, 2 units furnished, income \$220 month, requires \$5000 down. FR 9-9235. A

## WANTED TO BUY

CADILLAC ENGINE, 1949-1954, price must be right. PL 4-4384. B  
SHOTGUN, 16 or 20 gauge, for varmint. Box 822. B  
TRANSPORTATION TOKENS, for collection. FR 5-1170. B  
RADIO, for garage, AM-FM or tuner. PL 2-9597. B  
UMBRELLA TENT, nylon 9'x9'. Box 816. B  
PICKUP TRUCK, 1940-1950 Ford or Chevrolet, 1/2 ton. UN 3-1728. B  
DECOYS, duck & goose. FR 9-3128. B  
TONNEAU COVER for 1957 Ford convertible. FR 4-4140. B  
GLIDER, primary type single place or 2-place sailplane. OS 6-3319. B  
LAPIDARY FACET CUTTER, equipment for cutting facet gems. OS 5-7340. B  
STATION WAGON, \$200. OR 1-6460. B  
CAMERA & PROJECTOR, 35 mm. DA 4-5532. B  
COLT AUTOMATIC, 38 or 32 cal. PL 4-1008. B  
JACK HAMMER, gasoline driven, portable, and/or rock drill. KE 2-1361. B

## FOR TRADE

MAPLE BED, double, box springs, inner-spring mattress, trade for maple bunk beds. FR 5-5446. C  
FORD, 1946 tudor, for clean 1940, 1941 or 1946 Ford coupe. OS 6-3319. C  
TRAILER HOUSE, 2-bedroom, 1954 model, 35', trade for house. OS 6-9086. C

## FREE (to be given away)

BOXER, mixed, female, 10 mos. old, rabies & distemper shots, spayed, loves children. LA 2-6430. D

## RENTALS OFFERED

APARTMENT, new 3-bedroom, new furniture, disposal, Imperial & Broadway, adults, \$75, water paid. PL 5-9022. E  
APARTMENT, 1-bedroom, private patio, disposal, garage, Inglewood. OR 2-1104. E  
APARTMENT, new 1-bedroom, near Northrop, \$67.50. OR 1-5617. E  
HOUSE, 2-bedroom stucco, garage, disposal, recently painted, children o.k., \$90. OS 6-5910. E  
APARTMENT, 2-bedroom furnished, utilities paid, Manhattan Beach. FR 9-3048. E  
SLEEPING ROOM, private entrance, near Plant 1, man only, \$7 week. OS 6-7104. E  
BEDROOM, furnished, in 3-bedroom home, next to bath, semi-private entrance, \$12 week. OS 5-0576. E  
APARTMENT, unfurnished 1-bedroom, disposal, private patio, garage, Inglewood area. OR 2-1104. E  
BACHELOR APARTMENT, small, furnished, utilities paid, swimming pool privileges, near Northrop, \$60. OR 2-2093. E  
ROOM, newly furnished, private entrance, bath, \$10 week. DA 9-4016. E  
APARTMENT, large 1-bedroom, furnished, twin beds, sun deck, garage, near beach. FR 5-4118. E  
BACHELOR APARTMENT, furnished, no kitchen, newly painted, near Northrop, \$60, utilities paid. OS 6-3326. E  
HOUSE, 3 room, near Northrop, adults. LU 7-5619. E  
SLEEPING ROOM, newly furnished, private bath, entrance, man. DA 9-4016. E  
ROOM, private entrance & bath, private parking, near Northrop. OS 6-6696. E  
TRIPLEX, 1-bedroom each, unfurnished, Torrance. OS 6-9086. E  
APARTMENT, single, furnished, utilities paid, \$50 month. PL 7-3821. E

Hourly Wages	Weekly Wages	Disability Benefit
\$1.25	\$50.00 to \$50.99	\$31.00
1.285	51.00 to 52.99	32.00
1.325	53.00 to 54.99	33.00
1.375	55.00 to 56.99	34.00
1.425	57.00 to 58.99	35.00
1.475	59.00 to 68.99	40.00
1.725	69.00 to 70.99	41.00
1.775	71.00 to 72.99	42.00
1.825	73.00 to 74.99	43.00
1.875	75.00 to 75.99	44.00
1.90	76.00 to 77.99	45.00
1.95	78.00 to 79.99	46.00
2.00	80.00 to 81.99	47.00
2.05	82.00 to 83.99	48.00
2.10	84.00 to 85.99	49.00
2.15	86.00 and over	50.00

The above schedule is applicable to disability starting January 1, 1958, or after.

## RENTALS OFFERED

APARTMENT, 2-bedroom, 1 bedroom furnished, carpet, stove & refrigerator if desired, adults. VE 8-6987. E  
APARTMENT, 2-bedroom, sub lease 6 months, swimming pool, unfurnished. PL 5-4759. E  
APARTMENT, unfurnished deluxe 2-bedroom, carpeting, electric range & oven, fireplace, service & sun porch, garage. OR 8-8062. E  
ROOM, large, private bath, heated pool, near Crenshaw & Santa Barbara, \$15 week single, \$10 each, couple. AX 3-5561. E

## RENTALS WANTED

HOUSE or DUPLEX, furnished 2-bedroom, to \$95. OR 2-6314. F

## CHILD CARE OFFERED

DAY CARE, any age, hot meals, naps, fenced yard, licensed, references, near Sepulveda & Hawthorne. DA 6-3282. G

## CHILD CARE WANTED

CHILD CARE WANTED, 3 p.m.-12:45 a.m., 5 nights weekly, 2 boys, 4 & 11, no housework or ironing. DA 3-6206, before 2 p.m. H

## PERSONALS

THANK YOU: Thanks to the N.R.C. for their thoughtfulness while I was hospitalized. STAN RYAN. L  
SHARE APARTMENT, bachelor, 25, to share expenses on 2-bedroom apartment, Hollywood Riviera, near beach, garage. FR 8-4614. L  
WANT PLUMBER, for home modification, lowest estimate. OS 5-0838. L  
THANK YOU: My deepest thanks to all Norcrafters for the many cards and kind desires performed for me and my family during my serious illness. D. D. HENDERSON. L  
SHARE HOME, working mother w/3-year old child will share 2-bedroom home with same or with 1 or 2 girls, \$45 month. OS 6-4851. L

## FOR SALE OR TRADE

SCINTILLATOR, Precision, model 117, trade for tape recorder, camera equipment, furniture. Box 819. M  
BICYCLE, boys' 20", w/training wheels, \$15 or trade for used 26" racer bike. GA 3-1363. M  
STOVE, gas, \$30. TE 1-1527. M  
DIAMOND RING, man's, \$90 or trade. FR 4-4140. M  
CHEVROLET, 1955 V-8 hardtop convertible, Powerglide, \$1350, \$189.36 for equity, or transportation car and refinance balance. Box 812. M  
WRIST WATCH, man's Le Coultre, yellow gold, DA 3-2592. M  
MOTORCYCLE, 1954 200 c.c. Francis Barnett, \$175 or trade for car. OR 1-1660. M  
MERCURY, 1957 Phaeton Monterey hardtop, \$3100 or trade equity for sports car. HO 5-7242, 5-7 p.m. M  
FORD, 1956 Parklane station wagon, Ford-O-Matic, power steering, \$1850, accept trade for part or all of down payment. Box 806. M  
MICROPHONES, 2 RCA ribbon, \$15 each or trade for double barrel 12 ga. shotgun, .22 pistol, or electronic equipment. FR 9-3179. M  
PICKUP, 1950 G.M.C. 3/4 ton, 4-speed. OS 6-7881. M  
BENCH SAW, Craftsman 10" tilting arbor, stand, dado set, molding head. FR 5-2959. M  
FORD, 1951 4-door, overdrive, \$375 or take train set in trade. OS 5-6012. M  
ELECTRIC TRAIN, HO gauge, rolling stock, case, \$200 or trade for 4x5 Speed Graphic camera, accessories. Box 825. M  
WASHER-DRYER, Bendix duomatic, 220V electric, \$150 or trade for freezer. FR 4-0476. M  
TRANSMISSION, 1938 La Salle, sell or trade for outboard motor. KE 3-3078. M





**EL SEGUNDO**—Doll contest judging was done by Mr. E. Hasselblad and Mary Kreps of Childrens Baptist Home. Winners were: Kitty Frey, 1st most beautiful; Eleanor Grazes, 2nd; and Susan Buchanan, 3rd. Also, Gertrude Ahrens, 1st most unique; Kay Tougau, 2nd, and Shirley Vickers, 3rd.

## BOAT CLUB SETS NEW COURSE IN SAFETY AT SEA

Boating enthusiasts at Northrop are eligible to attend a free course in Small Boat Handling, Piloting, and Safety at Sea, it was announced by NRC Boat Club commissioner Steve Sabo.

The first of ten meetings during the course was held last night. Sabo stated that there's still time to get in on the program. Class meetings are conducted each Tuesday from 7:30 to 9 p.m. at the NRC Clubhouse.

U. S. Coast Guard Auxiliary Flotilla 65 will assist in the instruction and those indicating special ability may receive additional instruction toward eligibility for Coast Guard Auxiliary membership.

Also announced were plans for a courtesy boat inspection which will be available to all Northrop boat owners this coming March. Exact date will be confirmed.

## Skin Diving Trophy Dinner Speaker is Top Spearfisher

The annual Skin Diving trophy presentation and luau will be held Saturday, February 1, it was revealed by Lillian Kemble, commissioner.

Speaker of the evening will be Ralph Davis, founder of the International Underwater Spearfishing Association in 1950. He is credited with the establishment of underwater spearfishing as a National A.A.U. sport in the

## Auto Registration Due Feb. 4th

Norcrafters are reminded that the time is here again to renew registration on automobiles. The State Department of Motor Vehicles advises that the designated period of renewal is January 2 through February 4, and early renewal is suggested in order to avoid not only the last minute rush, but also the penalties to be collected on any registration after deadline date.

The penalty scale for delaying



**DOLL CONTEST WINNERS**—At Hawthorne, above, Delayne Rasmussen, 2nd most beautiful; Elaine Tompkins, 3rd most beautiful; and Amy Westwood, 2nd most unique. Below: Elizabeth Hall, 1st most unique; Shirley Hoper, 1st most beautiful; and Toni Janae, 3rd most unique.



## Christmas Caroling Chorus Rehearsing for Festivals

Among the rewarding holiday experiences enjoyed by the NRC Mixed Chorus, was an impromptu visit with the family of Mr. and Mrs. Whitley C. Collins in Beverly Hills.

Upon returning from an engagement of carol singing at the Los Angeles Orphans Home, the twenty members participating decided to pass by the Collins' home for a few moments of caroling. This unexpected gesture prompted an invitation by Mr. Collins and family. Inside, the chorus continued its singing strengthened by the voices of the Collins family.

With holiday caroling now over with, the chorus is busy holding rehearsals for several coming engagements. Norcrafters interested in joining the group are invited to contact Personnel Activities.

The Mixed Chorus is scheduled to participate in the Los Angeles City Festival of Music March 1, following a program for the Palms Woman's Club of Culver City on February 18. Later in March the group will sing for the Larch PTA and in the Lenox Spring Festival of Music.

# Northrop Bowlers Vie In West's Biggest Go

Northrop bowlers established another Northrop "first" during the annual NRC Christmas Tournament held over the vacation period. According to Commissioner Lloyd Forstrom, it was the largest tournament of its kind ever to be held west of the Mississippi.

Bowlers from all facilities converged at Rose Lanes for four days. Many came in on Thursday, day after Christmas, to roll off events which could not be scheduled. Others were in for practice prior to tournament play.

Every squad was off on scheduled time with no delays for any event. Forstrom reported. The better bowlers some exceptionally good scores. If this is any indication of what's in store

## NRC Ski Club New Activity

A new winter sports club, the NRC Ski Club, has held its second meeting since its inception prior to the holiday season.

Excellent turnouts were recorded for both get togethers with plans already underway to establish regular meeting dates, club ski activities and selection of a commissioner.

Highlights of the meetings have been special skiing movies. Any Norcrafter interested in this new activity should contact Personnel Activities, extension 2784.

## Management Hosts NRC



**ANNUAL PARTY**—Honoring NRC Norcrafters. At head table, above: Mr. & Mrs. Ron Wiggins, Mr. & Mrs. Boyd Corwin, President Whitley C. Collins, Mr. & Mrs. Gene Boggess, Mr. & Mrs. William C. McDuffie, chairman of Northrop board of directors. Left, NRC President & Mrs. Gene Boggess, Northrop's President Collins.



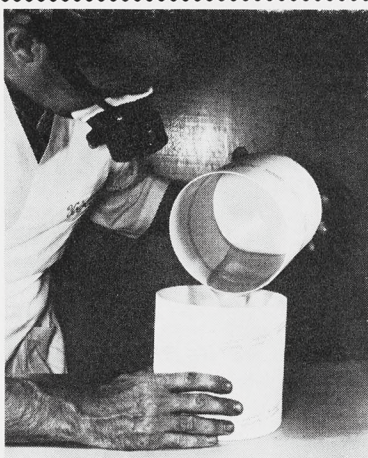
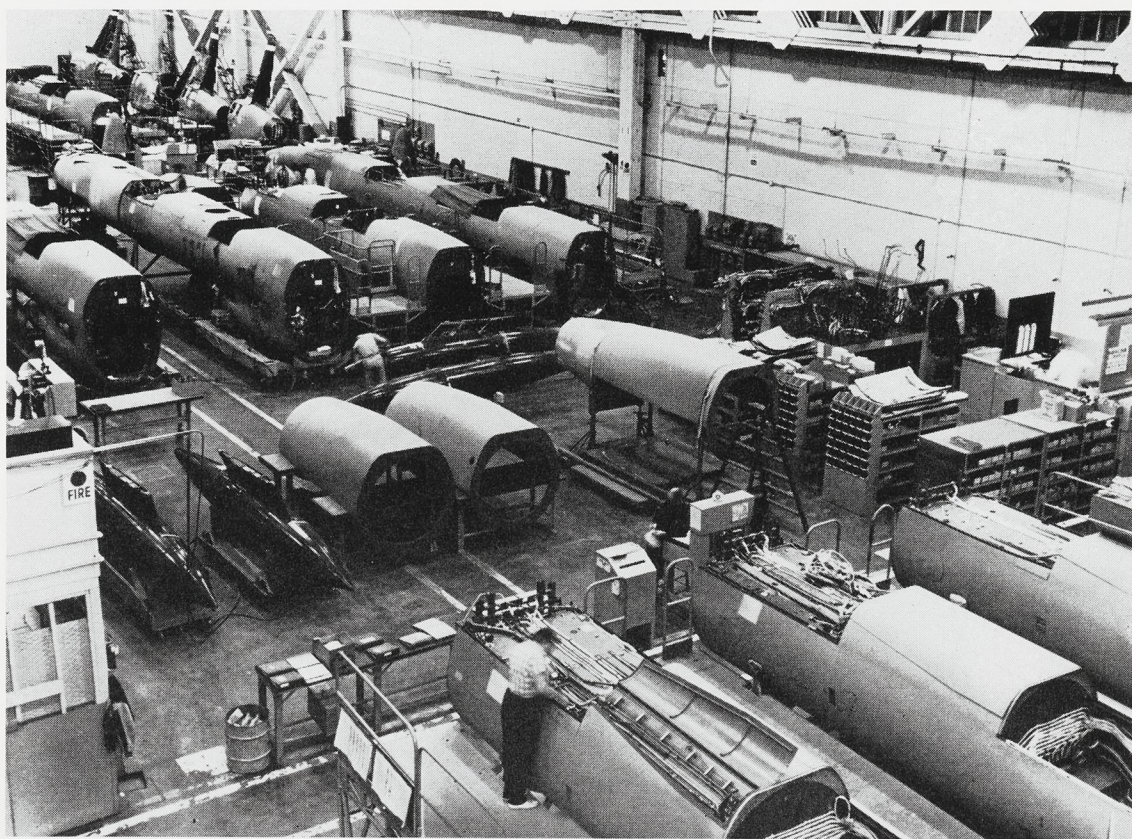
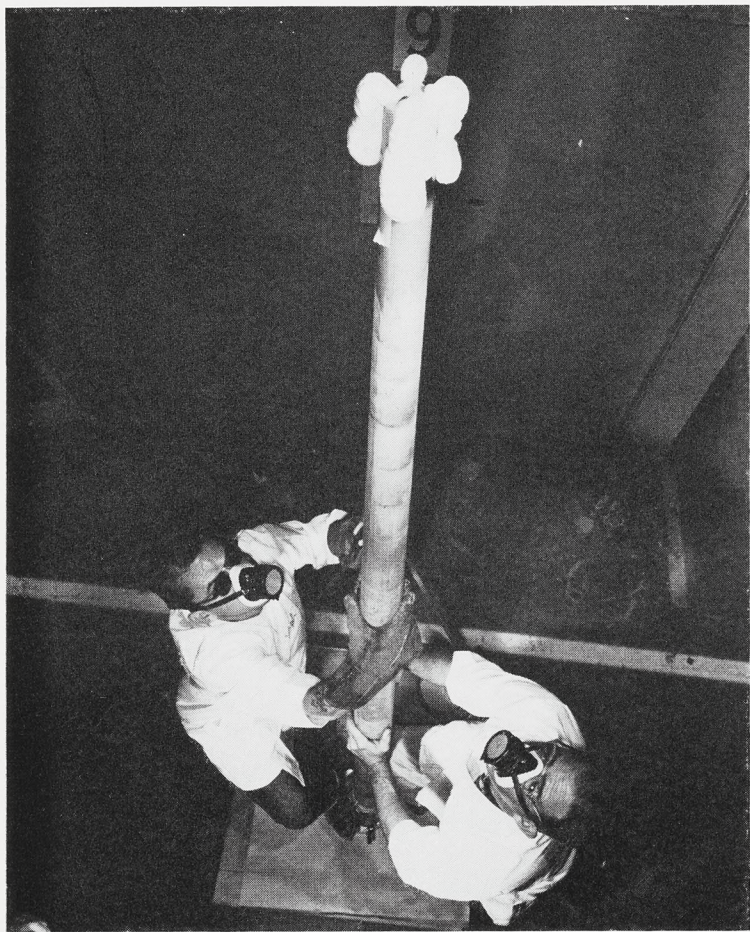
**ABOVE**, Past NRC President and Mrs. Walt DeVore receive commemorative gifts during the party. Left, NRC vice-presidents from Palmdale and Edwards facilities were honored; Les Eisele and George Fels of Edwards and Marshall McCain and Earl Brandenburg of Palmdale. Colorful party was held at NRC Clubhouse on Saturday, December 14.



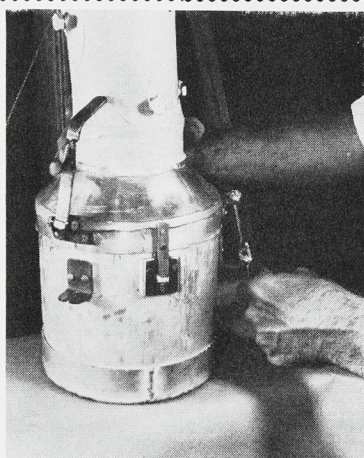
# Northrop News Pictorial

**FIRST SNARK PRODUCTION PHOTO**—Just released by the U. S. Air Force is this photo of the Snark production line at Plant III. The Snark, world's first proven inter-continental guided missile, is capable of carrying a nuclear warhead to a transoceanic target with pinpoint accuracy. This was dramatically demonstrated in recent 5000-mile flights from the Cape Canaveral launching site to Ascension Island. The Snark has been assigned to operational duty with units of the Strategic Air Command.

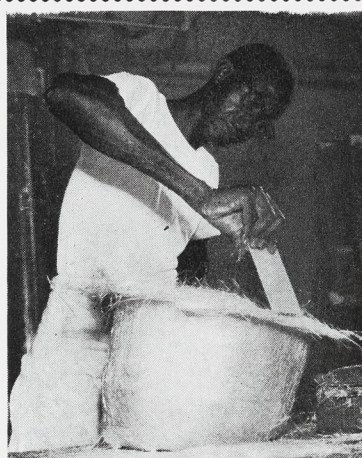
## Plastic Shop Ingenuity



**SNARK BOOM**, left spouts plastic foam used to hold delicate inner tubing firm. Plastic Shop Norcrafters Harry Cuda and Ray Fuelle shown holding the boom.

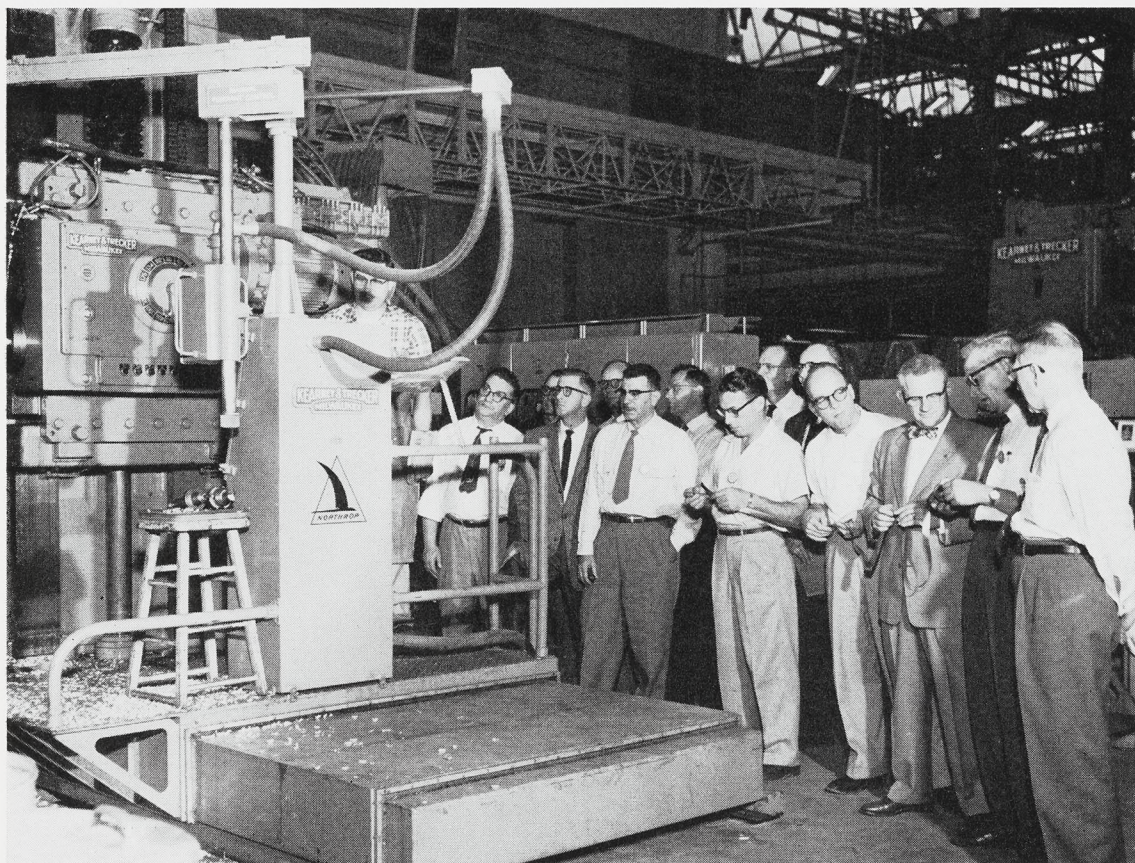


**HOW IT'S DONE:** Liquid plastic, mixed with catalyst, is placed in pot at base of boom. Chemical action takes plastic foam evenly through boom and out top.



**GLASS HAT** — Vern Moore prepares fiber glass pre-form by saturating with polyester resin. Unit will be placed in the mold, cured; will be a precision part.

## Design Engineers See Latest in Shop

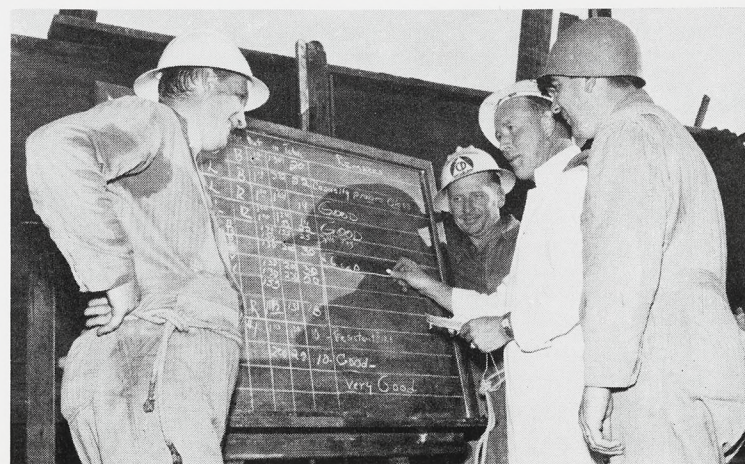


**FOR MORE ECONOMICAL COMPONENTS**—Northrop design engineers see new numerically-controlled machine profiler in operation. Tour of newest shop machines was sponsored to familiarize designers with latest in manufacturing tools, capable of producing improved and more economical aircraft parts. Group, from left, includes A. E. Salen, Earl Parks, Dick Coulston, Paul Bonham, Al Arslan, Lowell Waters, Walt Degenfelder, Walt Christensen, Bob Kuvow, Ken Saum, Bill Wagner, Art Eskelin, and Charlie Kram. Operator is Mack Duncan. Eskelin is Manufacturing R&D specialist, Wagner is head of producibility design consultants and standards. Kram is the producibility design consultant on machining, was organizer of the tour. More tours will follow.



## Disaster Rescue Training

**IN EVENT OF AN EMERGENCY**—Norcrafters Fred Mackelrath, Gerald Arneson, and Joe Johnson, above, are among 27 participants in a training course conducted by the Los Angeles Civil Defense Rescue Training School at Chavez Ravine. Below, the three Northrop men go over day's results with Charles Countee of L.A. Bureau of Public Buildings. Among the trainees were a number of officials from L. A. city and county departments.





## NEWS BRIEFS

**MANUFACTURING**—D. S. Lewis, vice-president, Project Management, McDonnell Aircraft, visited Northrop last week, reviewed progress of F-4H program. Vice-president Richard R. Nolan advises that Mr. Lewis was pleased by product quality, but expressed need for improved schedule position—with emphasis especially in the boundary layer control areas of the airplane.

**NORTRONICS**—Administrative details of organization are fast taking shape. This is reflected in the weekly personnel report where number of people stands at over 1900. Actual count is near 4600 with many elements due to be transferred from Northrop Division. Separation day—"S-day" has been announced as being set at 1 August '58. At this time Nortronics organization will be complete and separate. However, certain service functions, wherever economy may be effected, will be supplied the division by other Northrop Aircraft, Inc. divisions. Service illustrations are: Security, Medical, NRC, Telephones, to name a few. This is a policy of Northrop Aircraft, Inc. Organization point emphasized by Dr. Ballhaus, vice-president and Division general manager, is that organizational alignments have been established on the basis of product areas.

This is in order to obtain maximum effectiveness of capabilities and not just for geographic reasons. Nortronics principal products at the outset are—inertial guidance, infra-red applications, flight controls and servos, computers, precision optics—these for ES&E (Plant II). And for SS (Anaheim)—ground support and test equipment for the Snark missile; airborne and ground equipment optics for Snark missiles; weapon system components for the Raytheon Hawk airframe and ground support equipment contracts; DATICO automatic check-out equipment for weapons systems—and advanced ground vehicle fire control equipment for T-57 U. S. Army range finder.

**T-38 ROLLOUT**—Debut of a striking new supersonic trainer, Northrop's T-38, comes as forward fuselage unit is rolled out from assembly area. Headed toward instrumentation lab, then sled tests at Edwards. Norcrafters, from left, Ray Hopper, Eugene Lurk, Dave Large, Odean Nesland.

**NEARING COMPLETION**—Unique Inlet and Duct Test Facility, a major milestone in the planned expansion of the Aerothermodynamic Laboratories, will be in operation in the near future, stated George N. Mangurian, chief analytical engineer. Located adjacent to the 7-by-10-foot wind tunnel, this new propulsion aerodynamics facility will be used for specialized testing of the T-38 and a variety of other advanced Northrop programs . . . The only known installation of this type, it will provide the capability of full evaluation of internal and external aerodynamic characteristics of aircraft during the critical takeoff and landing periods, as well as detailed studies of internal aerodynamic characteristics over the full flight spectrum . . . Conventional duct test stands inherently induce significant distortions in the inlet airflow. To overcome this, Fluid Dynamics engineers designed two double-walled perforated test cells which will provide interference-free flow in the critical flight regimes. Operation of the Inlet and Duct Test Facility will be under the direction of Bob Katkov, chief, Fluid Dynamics.

**CONTRACTS "FINALIZED"**—Negotiations for definitive contracts on the T-38 and Snark missile letter contracts now held by Northrop were successfully completed last week in Dayton by Al Morgan and Paul Champion. General Manager Robert R. Miller, in discussing the contracts before the Management Council, stressed the need for tight budget and performance control. "We must live within the contract values of this business," he stated. "This will require strict adherence to budgets. The result will be a good profit. Management and supervision will have to stay on top of the program at all times. Cost status, as the contracts progress, will be subject to a continuous and detailed scrutiny."

**T-38 PROGRESS**—Rex Thornhill, assistant superintendent, T-38 manufacturing project office, reports that test forward fuselage went to Engineering lab last week for instrumentation (See NEWS BRIEFS, Page 2)



## SPOTLIGHT ON DEFENSE

M-C Slates  
Nomination  
Meet Feb. 7

Northrop Management Club will hold its annual Nominations Night dinner meeting February 7 at the Rodger Young Auditorium, according to A. H. Kendall, president.

Primary business of the evening will be the nomination of club officers for the coming year.

Guest speaker will be Judge Leroy Dawson, Los Angeles County Superior Court. Judge Dawson is a veteran of several radio-TV addresses concerning traffic safety and juvenile delinquency and is a well-known after dinner lecturer.

Tickets are \$2.50 and may be obtained from regular Management Club ticket representatives or from E. C. Hummel, Ext. 744. Dinner will be served at 7 p.m. with a social hour at 6:30 p.m.

**FATHER** and son build the Snark—Carl Hoffman, superintendent, Missile Manufacturing, and son, Gary, 10, spend evening in the den building their Snarks from the new Monogram Plastikits. Kits are now on sale at Personnel Activities Tool Store—Plant 1 area. (See Page 3 for story.)

COLLINS ASKS SENATE GROUP FOR  
DOUBLE-EDGE DEFENSE PROGRAM

America's state of preparedness was under the national spotlight last week.

Northrop Aircraft, Inc., President Whitley C. Collins was among the aircraft industrial leaders called to Washington to give opinions on defense status.

Statements were given before the Preparedness subcommittee of the Armed Services Committee, United States Senate.

Although much of the testimony was in closed session, the following selected points defined by Mr. Collins were released.

**Mr. Collins:**

"Northrop Aircraft, Inc., is appreciative and encouraged by this committee's efforts to identify obstacles to our missile progress and to search out ways and means to accelerate programs in the future.

"The Committee has heard much distinguished testimony concerning the enemy threat and the military posture we are to assume to meet this threat. It has heard testimony about the importance of the missiles of the future as well as the requirement for a force in being. Our position is that the country must have both.

"Because of budgetary limitations in the past, this country was hard pressed to maintain the minimum force in being we needed. There was very little remaining to advance our basic research or to exploit technical advances already understood, such as the ballistic missile. We are paying the price for that now.

"Today we must avoid making the same mistake in re-

(See SPOTLIGHT ON DEFENSE, Page 2)

COST-OF-LIVING PAY RAISE INCREASE  
ANNOUNCED FOR ALL HOURLY FOLK

Approximately 15,000 hourly-rated personnel of Northrop and Nortronics division will receive an additional one cent an hour cost-of-living pay increase effective February 3.

The raise is based on a 0.5 increase in the Consumer's Price Index which reached 121.6 for

the three month period ended December 15, 1957.

The increase applies to Northrop personnel located at Hawthorne, Anaheim, Palmdale, Edwards, Torrance, El Segundo, Pasadena, LAX, Holloman, New Mexico; and Patrick AFB, Florida.



# SPOTLIGHT ON DEFENSE —

(Continued from Page 1)

verse. A still limited defense budget must not cause us to neglect our forces in being in the effort to recapture the technological lead.

"We must have a stable plan, amply funded, which on a long term basis, will insure that we at all times have a proper balance between future development and current operational strength. term basis, will insure that we at all times have a proper balance between future development and current operational strength.

"To do this we must maintain a broad base of research which will give us the technical initiative so that we may choose the weapon systems of the future rather than react to the choices of others.

**"Our greatest deterrent is our offensive strength—our weapons in being today with the organization and trained manpower to use them. This is our true military posture and has taken years to achieve.**

"Weapons of the future have caught the public imagination. I believe in the necessity of rapid development of these weapons by the United States but the deterrent power of our country today lies primarily in our Strategic Air Command. Bombers and missiles will supplement each other.

"In the race for the conquest of space, we must not underrate the importance of this force. If we do not develop it to its limit, we could well lose the race for the future before it has begun.

"Emphasis on advanced development should not be allowed to divert attention from the necessity for attaining proper strength for our force in being. Our company makes the Snark, the first in-

tercontinental missile, which we view as part of this force in being, and a valuable supplement to the present manned bomber force.

"The history of the Snark missile points up a fundamental factor in any development cycle. The objective of a research and development program is to prove the performance characteristics of the weapon to be produced. If the earliest possible operational date is to be achieved, it is essential that the decision to go into production be made just as soon as confidence is established in these performance characteristics.

"In late 1955 the Snark characteristics were sufficiently known to have permitted a production order, this would have resulted in operational missiles in the inventory today.

"At that time budgetary limitations and the estimate of the enemy situation were such that this decision was postponed pending further demonstration. I am sure that if the urgency for national defense, as pointed up by this committee, had existed then, the Snark would be in the inventory now."

Subsequent to the release of the foregoing, eastern sources have published that the Committee brought out the fact that a Snark attack could not be stopped by modern means, and that it (Snark) carried a tremendous (censored) load.

As a striking finale to the meetings, wire dispatches from Cape Canaveral revealed that a Snark took off from Cocoa last weekend, flew the lonely flight southward across the Atlantic 5000 miles to Ascension Island.

She hit the target—bull's eye.



**NORTHROP SKYLINE AWARD**—Top honors for beauty and utility were awarded the new Science Center at Northrop by the Los Angeles Chapter of American Institute of Architects. With award, above, are designer William L. Pereira of Pereira and Luckman, Architects, Northrop President Whitley C. Collins, and Robert R. Miller, vice-president and Northrop Division general manager. Building was selected for award over more than 400 newly-built structures entered in the Southland competition.

## NEWS BRIEFS

(Continued from Page 1)

—Edwards next. Completion was on time. The second T-38 fuselage—thermo mock-up—is now out of jig, is getting installations. Prototype #1 due out of jig and ready for pick-up 1 February. Prototype #1 center section is in sew-up jig; wing is now started. For the propulsion test stand center section—two of the four major sub-assemblies are completed; two are started.

**McDONNELL** — Request for information on 84 additional 101 aft sections and 5 F-4H ship sets was received from McDonnell, it has been announced by Al Morgan, vice-president, Contracts and Service. Costs are critically important to the welfare of these two programs. General Manager Robert R. Miller asks that cost surveillance on the 101 and the F-4H be a number one factor at all times.

**MISSILE MOVE**—Manufacturing's missile project office, Max Fayrweather, superintendent, has been moved from Plant Two to Plant Three, it has been announced by Arch Wallen, Factory manager. This office maintains factory project control and coordination of Snark production. Move was to separate facilities and responsibility areas of Northrop Division and the Nortronics Division. Nortronics, with formation of that company, becomes a missile equipment supplier to the Northrop Division, the prime contractor.

## Norcrafters to Panelize on Research in Manufacturing

An all-Northrop panel will present a discussion of research and development in manufacturing.

The event will be at the February 17 meeting of the Society of Automotive Engineers, it was announced by Hap Herdrich, vice-chairman of the SAE production activity.

Panel leader will be Barney Gaennie, Northrop's chief of Manufacturing Research and Development. He will talk on tape control of machine tools and special research, Herdrich said.

Other panel speakers and their topics: Paul Warren on bonding honeycomb, metal to metal, and related processes; George Larsen on chem-milling and forming; Doug Hugill on tape-controlled riveting, special tooling and hot forming of exotic materials; and Dick Cude on plastic parts and tooling.

"Topics will be keyed to the

interest of all engineers in fabrication and processing of materials regardless of the industrial field," Herdrich stated.

The term, "research and development", is ordinarily understood to apply to the creative effort involved in the design and development of an end product, he pointed out. "This is particularly true in the aircraft industry."

However, too little understanding exists regarding the place of, or necessity for, research and development in the manufacturing process itself. The panel program will illustrate the growing importance of manufacturing R&D.

Meeting will take place in the auditorium of the General Petroleum Building, 612 South Flower St., Los Angeles; 7:30 to 9:30 p.m. February 17. There is no charge and meeting is open to non-members.

# Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 9

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**AIR DEFENSE STORY**—Round-the-clock effectiveness of the USAF Northrop F-89 in its air defense role was reported by the Los Angeles Times recently. For the feature story on air defense, aviation writer Marvin Miles, second from left, and columnist Gene Sherman, right, went to Oxnard AFB for an on-the-scene account. Above with Col. Dyson Cox, base commander, left; Hank Waklee, Northrop tech rep, center; and Lt. Col. William Sullivan, 437th Squadron commander, second from right; the L.A. Timesmen prepare for intercept flight aboard the F-89's. Photo by Larry Sharkey of the Times photo staff.

## Northrop Engineers Assist Students in Science Study

Two Northrop engineers have been first to participate in the Los Angeles City School—Industry Education Program, Phase II.

Under this program industrial specialists enter high school classrooms to acquaint students of mathematics, physics and chemistry with industrial application of principles taught in the classroom.

Northrop is represented on the planning committee for this program by Charles Eyres, supervisor in Engineering Administration.

Northrop lecturers participating in the program include Howard Childers, supervisor, Chemical Section, Materials and Process Engineering; Al Binsacca, supervisor, Metallurgical Section, Materials and Process Engineering; W. M. Steffen, supervisor, Non-Metallics Section, Materials and Process Engineering; and

L. A. Ohlinger, chief, Computer Services.

First lecture of the series was given by Childers, in December, on Application of Chemistry to Aircraft Manufacture. Binsacca followed with a lecture entitled Application of Basic Laws of Physics to Metallurgical Processes in Industry.

Other lectures will cover such topics as Plastic and Non-Metallics Usages in Modern Aircraft, plus mathematics and nuclear engineering.

Phase II of the current program is expected to continue through June with each Northrop lecturer appearing once or twice in a classroom. Under the program each participant industry is assigned a particular high school with which to work.

Northrop, leading the program in Los Angeles, was allowed to choose its assignee. According to

## M-M Award To News For Editorial

Northrop News Editor Charles Bradford has been awarded the Merchants and Manufacturers Association 1957 award for "... presentation of management's viewpoint on an important issue of the day".

The award-winning Northrop story was an editorial concerning the Civil Aeronautics Board hearings on the tragic air-collision and school yard crash of an F-89 and DC-7 near Pacoima last January. The editorial appeared in the March 27 issue of the Northrop News. The M & M termed it "unusually effective" and praised Northrop Aircraft for a straightforward clearly-stated account and opinion on an issue vital to the community.

Presentation of the award was made by Floyd Wohlwend, director of member relations, Merchants and Manufacturers Association at the January meeting of the Southern California Industrial Editor's Association.

## ADDED BENEFITS UP DEDUCT BASE—\$3000 TO \$3600

In order to meet additional costs of recently increased state disability insurance benefits, the California Department of Employment has announced an increase of the amount upon which based, it has been reported by George Forbes, Paymaster.

Effective January 1, 1958 employee contributions will be 1 per cent for the first \$3600 of wages paid. Previous base was \$3000.

Increased disability insurance benefits were announced early in January and reported in the Northrop News, January 15 issue.

Eyres, Hamilton High was chosen because of its outstanding record of known achievements by students in chemistry, physics and mathematics.

Executives of the L.A. School System reported high interest, good reception by the students.



# Phase Winds, Zero-Zero Weather Set Stage for Thule Danger Drill

Carl Silkey, Northrop tech rep, sends word of heroism from the land of eternal ice. Staunch built-in reliability of Northrop Scorpion airplanes helped to save lives in a job fraught with danger.

Lieutenant Arne Foss, I.S.O. for the Thule Tigers and their Scorpions, writes of a sudden phase at 30 knots across the runway, zero-zero visibility, six Scorpions and a T-bird—all airborne.

Cool heads and outstanding work by the 1983 AACS Squadron brought everybody in safe and sound, but not without a nervous moment or two.

It was dark in Greenland—the arctic night.

Lieutenant Foss, one of the F-89 pilots, tells the story: "During a routine radar proficiency training mission, six F-89D Scorpions of the 74th were airborne on a practice intercept of a T-33, also from the Squadron. The weather at time of take-off was good with above minimum forecasted for the remainder of the day.

"All of the fighters had completed their intercept and were marshalling for a recovery when the airfield closed in completely due to a sudden windstorm. Arctic gusts such as these are known to come up very suddenly and

ing behind him. Before he could taxi in he ran out of fuel.

"All of the aircraft were in the overcast during the entire penetration and approach, and none saw lights until streaking past the over-run of the landing runway. A most unique part of the final approach was an apparent wind shear about one mile from touchdown point apparently caused by some screening of the wind by the mountains that surround Thule Air Base. Here the gusts seemed to stop momentarily, causing all but the last aircraft to veer suddenly off to the right of course. It was certainly an incident indicating the value of training, procedures, and teamwork as there was absolutely no other solution under the "phase" conditions that existed.

"Pilots of the F-89s were Lieutenants Jim Weber, Bill Daoust, Wayne Johnson, Leo Metz, Dallas Smith, and myself. We all joined the squadron this summer and fall with Lt. Metz and myself coming direct from advanced flying school at Moody. Captain Pete Wiggins and Lieutenant Jim Royalty were driving the T-bird and were last to land and from what they say, it was quite a ride (just taxiing back down the active runway from their stopping point to the alert hangar consumed over 30 minutes' time).

"Word has been received from

AACS that this incident was a USAF record number of GCA "saves" under these conditions at one time. All of the crews had nothing but praise for GCA crew and many warm handshakes were exchanged."

## Monogram Snark Kits Now on Sale

A new plastic model kit straight out of the headlines has been on sale at the Northrop Personnel Activities Tool Store, Plant I. It's a true scale model of the 5000-mile Northrop USAF Snark.

The Monogram Plastik model, retailing for 98 cents, is scaled from official Northrop blueprints of the Snark. The model is 11 1/4 inches long and has a wing span of 6 and 3/8 inches.

Bill Cox, Public Relations, headed the Snark program working with Monogram Models, Inc. The product is the result of several months' painstaking effort.

The model Snark's color is red and the launcher and tractor are bright yellow.

Over 2500 Monogram Snark kits were sold at the Personnel Activities Tool Store on the day shipment was received.

(See photo, Page 1)

## STRATOSPHERE RADIO BOUNCE

The Northrop News wishes to acknowledge, with thanks, the assistance of Lenore Conn and her ham radio.

Mrs. Conn called Thule in the night hours so that details of this story could be checked.

This type of communication is called a "Marsgram". The radio waves must be bounced off the stratosphere due to the earth's curvature.

are the deep concern of even the most accomplished pilots. In this instance the airfield changed from a VFR weather situation with a 7-mile visibility to a zero-zero situation within less than one minute and with no advance warning. Blinding walls of blowing ice brought even vehicular traffic on the base to a complete halt. All crews landed safely in an operation that had to be seen to be believed. Only one go-around was required and even the light T-33 made a safe landing on its first try. Visibility conditions were so bad that only two of the six F-89s were able to taxi back to the squadron area. Even these would not have been moved except for the necessity of making room on the taxi apron for other landings and even then it was necessary for them to follow the lights of a fuel truck to make their way.

"All other F-89 aircraft waited out the early phase of the storm at various points around the airfield taxi system except one which turned off the runway onto the shoulder area to clear the runway for the aircraft land-

## Local Schools List Classes For Spring Night Scholars

It's back-to-school time for scores of Norcrafters who learn their three R's at night, and time for a reminder of the variety of classes that will be offered at local schools during spring semester.

For students whose work day is only half-over when the quitting-time whistle sounds, the University of Southern California will conduct several tuition-free, college credit courses on Northrop premises beginning the second week in February. These include graduate level courses, "Engineering Analysis", "Aerodynamics of Compressible Fluids", "Elements of Gas Dynamics" and undergraduate course, "Introduction to Theory of Complex Variables."

Classes conducted at Northrop by Northrop personnel will include Elementary and Advanced Stress, "Aeroelasticity" and "Principles of Electrical Design". These are certificate classes, conducted on a college level, but do not offer college credit.

The University of California at Los Angeles has announced a certificate program in Jet Propulsion. Prerequisite to this entire program is a Bachelor's degree in engineering or science. Some classes offered will be "Aerothermodynamics", "Chemistry of Propellants", "Rocket Engine Design", "Heat Transfer and Applications to Thermal Jet Engines", and "Special Turbo-machinery".

Several Northrop specialists who will be teaching courses at various local schools this semester, and courses, include "Funda-

mentals of Industrial Safety" by Lee Johnson, safety engineer, Northrop Division, Wednesday evenings, starting Feb. 5, at UCLA's Hill Street Building; "Structural Plastics" by Carl S. Seybold, engineering specialist, Radioplane, Wednesday nights, starting Feb. 12 at UCLA; and "Engineering Aerodynamics" by Arnold A. Jensen, Ph.D., supervisor of Aerodynamics, Fluid Dynamics Department, Northrop Division, Monday nights beginning Feb. 10 at UCLA.

Further information regarding these and other classes, or Northrop's Educational Refund Plan may be obtained from schools named or from Charles Eyres, supervisor, Engineering Correspondence, Ext. 1839 (for engineering personnel) or Tom Darden, manager, Industrial Training Administration, Ext. 2436.

Public school classes of interest to Norcrafters include "Aircraft Drafting and Blueprint Reading" taught by former Northrop Associate Engineer, Victor Liff at Hawthorne High School Monday and Wednesday evenings beginning Feb. 3. This Defense Department-sponsored course is free and open to anyone employed in defense work.

Aviation Ground School at Redondo High School will offer preparation for CAA written examinations. Class will begin Feb. 6 and meet Thursday nights.

Basic Russian grammar will be offered beginning Feb. 3 at Mira Costa High School in Manhattan Beach. Class meets Monday evenings.



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 2)  
FIGUEROA & W. 77th ST., Los Angeles.  
BILLY F. TAYLOR (5512-50716, Ext. 2568).

(Zone 5)  
KNOTT & LA PALMA AVE., Buena Park.  
ROBERT GELLER (5353-53839, Ext. 2347).  
LA 2-7676.  
ROSECRANS & CLARK, Bellflower, KATHRYN KLURE (5240-48528, Ext. 2002).  
TO 2-7246.

(Zone 8)  
SEPULVEDA & KATHRYN, Torrance.  
IRENE R. GROSSE (5160-14516, Ext. 545). FR 5-5525.

(Zone 10)  
MONTEREY & PIER AVE., Hermosa Beach.  
DAVID B. COAD (5561-21666, Ext. 1280).

(Zone 12)  
PRAIRIE & 117TH, Hawthorne. WILLIAM O. RANKIN (5162-14709, Ext. 1821).

(Zone 14)  
WINNETKA & SATICOY, Canoga Park. (Pool O.K.) HOWARD W. WALKER (7620-44791, Ext. 2049). DI 8-4406.

7:30 a.m. — 4:15 p.m.

(Zone 2)  
EMERSON & MANCHESTER, Los Angeles.  
BEA SHAMBURGER (1400-27792, Ext. 2113). OR 1-4906.

(Zone 5)  
WOODRUFF & SOUTH ST., Bellflower.  
L. M. DONAHUE (9542-27842, Ext. 2281). TO 6-8326.

(Zone 8)  
ARLINGTON & 190TH, Torrance. JEAN KIDD (9510-14169, Ext. 667). DA 9-1518.

(Zone 9)  
INGLEWOOD & REDONDO BEACH BLVD., Redondo Beach. BEVERLY ZEPEDA (1421-47087, Ext. 691). FR 6-6836.

(Zone 10)  
ROSECRANS & HIGHLAND, Manhattan Beach. A. HAMPTON (7511-33152, Ext. 2694). FR 6-0335.

(Zone 13)  
BIRCH & BROADWAY, Hawthorne. RUTH E. FUSI (3010-45074, Ext. 2188). 3-10

(Zone 13)  
ROSECRANS & PACIFIC, Manhattan Beach. J. A. CHAMBERLAIN (7511-27305, Ext. 2694). FR 9-2774.

(Zone 13)  
SEPULVEDA & CULVER BLVD., Culver City. E. D. PEDEN (8930-15664, Ext. 2773).

### RIDES WANTED

8:00 a.m. — 4:45 p.m.

(Zone 2)  
MUIRFIELD & SANTA ROSELIA, Los Angeles. (Car pool considered.) RALPH ORTASSE (3271-51084, Ext. 2491). AX 4-4831.

(Zone 5)  
KNOTT & LA PALMA AVE., Buena Park.  
ROBERT GELLER (5353-53839, Ext. 2347). LA 2-7676.

(Zone 5)  
GOULD LANE & VALLEY DR., Hermosa Beach, Manhattan. (Gould Lane to Manhattan Beach Blvd., Compton Blvd. to Hawthorne Blvd.) EDITH DARRAGH (5355-15838, Ext. 621). FR 2-4593.

(Zone 5)  
WINNETKA & SATICOY, Canoga Park. (Pool O.K.) HOWARD W. WALKER (5355-15838, Ext. 621). FR 2-4593.

(Zone 5)  
STUDEBAKER & IMPERIAL, Norwalk. (Pick up on Imperial from Studebaker to Western.) GEORGE NOSACKA (7020-27037, Ext. 788). UN 4-2673.

(Zone 4)  
DOWNEY & STEWART & GRAY RD., Downey. (Car pool considered.) JAMES H. MCNEIL (3554-37486, Ext. 1522). TO 2-8578.

(Zone 6)  
VERMONT & 169TH, Gardena. (Will consider car pool.) THOMAS E. COLLINS (3360-51325, Ext. 1889). DA 3-3621.

(Zone 14)  
FOOTHILL & RAMSDALE AVE., La Crescenta. (pick up in La Crescenta, La Canada, West Pasadena or Highland Park.) M. L. DUNBAR (5515-31869, Ext. 1825). CH 9-6305.

(Zone 10)  
REDONDO BEACH & PIER AVE., Redondo Beach. R. E. THOMAS (5564-54062, Ext. 555). FR 4-4484.

(Zone 2)  
ANYWHERE IN PASADENA. (Car pool considered.) CHAS. M. HERRERA (5550-10110, Ext. 2759B). SY 3-1771.

(Zone 3)  
AZUSA AVE. & SAN BERNARDINO FREEWAY, Azusa. (Pool desired from Azusa, Covina, Baldwin Park, Puente, or near Freeway.) JOHN C. HEMPSMYER (5223-15261, Ext. 563). ED 4-6598.

(Zone 4)  
HAZARD & NEWHOPE, Garden Grove. ARTHUR L. BURTON (5240-45341, Ext. 2002). JE 1-2414.

(Zone 14)  
HOLLYWOOD & VINE, Hollywood. (Start or join pool.) R. E. KANTER (5940-44528, Ext. 2661). HO 4-3326.

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(Zone 8)  
PALOS VERDES BLVD. & CARSON, Torrance. ROSEMARY T. MARTENS (3548-37951, Ext. 1353).

(Zone 8)  
ESHELMAN & LOMITA, Lomita. B. J. MALCOMBE (5550-20010, Ext. 2770). DA 5-0473.

(Zone 8)  
ANYWHERE IN PASADENA. (Car pool considered.) CHAS. M. HERRERA (5550-10110, Ext. 2759B). SY 3-1771.

(Zone 2)  
FIGUEROA & 11TH, Los Angeles. HARRIET LITTY (5508-19781, Ext. 2755). RI 8-9069.

(Zone 3)  
AZUSA AVE. & SAN BERNARDINO FREEWAY, Azusa. (Pool desired from Azusa, Covina, Baldwin Park, Puente, or near Freeway.) JOHN C. HEMPSMYER (5223-15261, Ext. 563). ED 4-6598.

(Zone 14)  
HOLLYWOOD & VINE, Hollywood. (Start or join pool.) R. E. KANTER (5940-44528, Ext. 2661). HO 4-3326.

(Zone 14)  
PICO & CRENSHAW, Los Angeles. FRANK KOCH (5503-16458, Ext. 2681).

(Zone 14)  
MYRTLE & KESLO, Inglewood. (Ride home only. O.K. to Kelso & Prairie.) GRACE WEIKAL (5564B-20955, Ext. 1251). OR 7-5617.

(Zone 14)  
GRACE WEIKAL (5564B-20955, Ext. 1251). OR 7-5617.

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
WASHINGTON & FIGUEROA, Los Angeles. (Pick up on Figueroa, Hoover or Vermont.) D. A. CLARKE (5501-17488, Ext. 2200). RI 8-4858.

(Zone 5)  
KNOTT & LA PALMA AVE., Buena Park.  
ROBERT GELLER (5353-53839, Ext. 2347). LA 2-7676.

(Zone 5)  
GOULD LANE & VALLEY DR., Hermosa Beach, Manhattan. (Gould Lane to Manhattan Beach Blvd., Compton Blvd. to Hawthorne Blvd.) EDITH DARRAGH (5355-15838, Ext. 621). FR 2-4593.

(Zone 5)  
WINNETKA & SATICOY, Canoga Park. (Pool O.K.) HOWARD W. WALKER (5355-15838, Ext. 621). FR 2-4593.

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REDONDO BEACH & PIER AVE., Redondo Beach. R. E. THOMAS (5564-54062, Ext. 555). FR 4-4484.

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# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, one week before publication.

## FOR SALE

BOAT, 15' Campbell Class E, full race, Mercury engine, fiberglassed, trailer. FR 2-0026. 10:30 a.m.-2:30 p.m. A

DRAFTING MACHINE, Vemco, 24" & 36" arms, 12" & 18" al. scales, \$70. PL 9-8371. A

SHOTGUN, Savage 12 ga. semi-automatic, full choke, \$75. FR 9-3128. A

AUSTIN-HEALEY, 1956 Le Mans, Chevrolet V-8 engine, Power-Glide. AX 4-0483. A

HIDE-A-BED, Sealey, rose biege, new mattress. PL 4-4376. A

BABY FURNITURE, bed & double door chifffonier for child up to 6 years, \$25. FR 2-9041. A

BRAKE SET, for Volkswagen, new shoes, rivets, \$5. DA 3-6924. A

FREEZER, 9 cu. ft. Frigidaire, \$75. FR 5-0330. A

ACCORDION, 120 bass, 5 switch, used 1 year, \$165. OR 4-0224. A

HOUSE, 3-bedroom stucco, R-3, patio, work shop, detached double garage, chain link fence, \$10,900, \$4000 down. FR 2-0585. A

SPORTSMAN TOP, Bora, for 1/2 or 3/4 ton Dodge, will fit other make, includes boat rack, \$125. DA 4-9019. A

ENCYCLOPEDIA, American Peoples, includes children's set, 12 volumes of great literary works, bookcase, \$400. EA 2-3665. A

DACHSHUND, female, 2 months, small standard. AKC. \$75. TO 7-8588. A

MESSERSCHMITT, 1956 deluxe, \$400. OR 4-3305. A

GUN, Colt .38 special target model, 6" barrel, dishd triaque, 5 point grips, \$60. FR 8-1569. A

FORD T-BIRD, 1957, full power, Ford-O-Matic. WE 8-7793. A

WASHER, Frigidaire automatic, used 6 months, Box 903. A

CHEVROLET, 1951 club coupe, 1954 engine, recently overhauled, Powerglide, 1958 license, \$375. Box 904. A

DAVENPORT, matching chair, light yellow, \$75. DA 4-2472. A

CADILLAC, 1947 convertible, \$150. DA 3-2170. A

BABY STROLLER & HIGH CHAIR. FR 9-0706. A

OLDSMOBILE, 1957 Super 88 Holiday, extras, \$2850. DA 3-2592. A

MOTORCYCLE, 1956 DKW, 250 cc, 6 mo. old, companion seat, luggage rack, large windshield, \$500. PL 5-4764. A

TONNEAU COVER, for 1955-1956 Ford convertible, \$20. GR 7-1937. A

FORD, 1940 convertible, Carson top, \$200. FR 4-8784. A

WASHER, Bendix automatic, \$35. FA 8-5958. A

IRONER, electric, cabinet type, \$25. PL 1-1339. A

MANIFOLD, carb, linkage, set dual quad, \$50. Box 902. A

APARTMENTS, 7 units, 2 furnished, income \$460 month. RE 3-9464. A

COMMUNICATOR, Gonset II, 6 meter, 6 v. & 115 v., used little, \$180. WI 7-6228. A

FORD, 1951 Victoria, Ford-O-Matic, \$300. FR 8-2662. A

HOUSE, 3-bedroom, carpet, disposal, fenced, Sepulveda & Figueroa, \$10,750. TE 5-2508. A

OLDSMOBILE, 1953 Holiday 98 hardtop convertible, power steering, brakes, windows, seats, \$943, take over payments, \$58.25 month. FR 6-6239. A

RECEIVER, Heath all-band, S.W. & B.C., \$25. Box 901. A

MODEL RAILROAD, HO gauge, 2 tracks, streamliner, freight trains, cars, transformer, electric switches. FR 6-2504. A

CHEVROLET, 1954 2-door, extras. OS 5-5406. A

MOTORCYCLE, 1957 Zundapp, 200 cc, racing tires, \$300. TO 7-9504. A

BUICK, 1955 Special Riviera, \$1400. OS 6-0207. A

CHEVROLET, 1950 sedan, \$250. OR 1-4304. A

DUPLEX, front has 3 bedrooms, 1 1/2 baths, carpet, rear has 1 bedroom, double garage, fenced, \$19,500, \$6000 down, owner will carry second mortgage. OR 2-7775. A

BOAT TRAILER, Sears, for 14' boat, \$35. OS 5-6809. A

CLOTHES DRYER, Whirlpool, electric, 220v. AC, 2 years old, model AD-80, regular size. OS 6-2938. A

FORD, 1955 V-8 convertible Sunliner, power windows, seats, steering, \$1250. LA 6-6759. A

SEWING MACHINE, 1957 Remington, mahogany console, attachments, must sell, \$150. OS 5-4576. A

VOLKSWAGEN, 1956 sedan, recent tune-up, new brakes, \$1475. OR 2-5487. A

VACUUM CLEANER, Revelation, case, attachments, \$40. DA 4-3998. A

## FOR SALE

CHRYSLER, 1939 6 cyl. sedan, overdrive, chrome plated cylinder walls, 1948 engine. OR 1-6460. A

OLDSMOBILE, 1949 4-door Super 88, \$75. FR 4-7697. A

LOTS, 2, Hollywood Hills above Sunset Strip, \$6500 or \$3700 and \$3300. OL 2-9542. A

FREEZER, 12 cu. ft. Amana upright, \$250. DA 4-5047. A

MERCURY, 1949 4-door, new paint, 1951 engine, \$250. NE 8-5715. A

DAVENPORT & ROCKER, matched, \$35. DA 4-6748. A

EXPOSURE METER, Weston Master II, case, \$12. OS 6-0933. A

STUDEBAKER, 1947 Commander club coupe, must sell, \$100. AX 4-1139. A

CAMERA, Bolex H, 16 mm. Leader, 75 mm. telephoto Yvar 1:2.8, 15 mm. wide angle Yvar 1:2.8, 25 mm. Switar 1:1.5, case, light meter, tripod, table top, filters, splicer, \$390. AT 1-6732. A

BREAKFAST SET, chrome, extension, \$35. DA 9-7091. A

PONTIAC, 1949 4-door. Box 905. A

HALF-MOWER, edger, Capitol, \$12. OS 5-4736. A

CHEVROLET, 1948 business coupe, new battery, new clutch, \$165. DA 4-8853. A

MILL, B & S #1, 27" travel, \$395. PL 4-8689. A

PLYMOUTH, 1950 2-door, \$235. AX 5-3263. A

GUNS, Colt 45 automatic, holster, ammunition, w/grips, \$45; Ruger single six, holster, ammunition, \$65; Winchester 22, pump action rifle, \$55. PL 6-6578. A

CHRYSLER, 1949, \$200. FR 4-9737. A

TRAILER, 2-wheel, 6'x4 1/2', canvas & lights, \$45. OS 5-8577. A

OLDSMOBILE, 1952 Super 88. OR 2-6385. A

DINING ROOM SET, dark walnut, buffet, 4 chairs, OR 4-9321. A

DAVENPORT, 89", pillow arm, cocoadamask. PL 1-2784. A

TRAILER, Aljo 1957, 15' sleeps 5, butane stove, oven, light, ice box, electric brakes, cover, \$800. DA 4-0665. A

MOTOR SCOOTER, 1955 Cushman, overhauled recently, \$125. ED 3-9375. A

RADIO - PHONOGRAPH, console. EX 1-5964. A

SPEAKER ENCLOSURE, Karlson. FR 6-4932. A

RANGE, gas, oven, \$25. OS 6-8565. A

CITROEN, 1952, must sell. TE 3-1950. A

DRAFTING MACHINE, Bruning, 18" arms, \$25. FR 5-7364. A

FURNITURE, 4-rooms, take over payments, \$32 month. OS 5-0674. A

RADIO-PHONOGRAPH, RCA table model, 45 rpm. spindle, \$50. FA 8-0749. A

FORD, 1947 coupe, V-8 Chevrolet engine, Corvette cam, lifters, springs, ported heads, \$500. OR 7-4133. A

LOT, Big Bear Lake, level, w/trees, 78'x130', surveyed, near golf course, ski lifts, \$1500. OR 8-5307. A

WASHER, Hotpoint automatic, \$50. AX 3-7396. A

PLYMOUTH, 1949 4-door. OR 8-9701. A

HOUSE, 3-bedroom, 2 baths, fireplace, ocean view, San Pedro, \$1500 down. TE 2-7163. A

HOUSE, GI resale, 1/2 acre, 3-bedroom, 2 baths, Rolling Hills, \$28,000. TE 3-9902. A

BEDROOM SET, blonde, night stands, \$85. DA 6-4379. A

MOTOR SCOOTER, Zundapp, 1956. FR 9-1160. A

BABY FURNITURE, crib, mattress, high chair, \$15. FR 4-2505. A

MERCURY, 1954 convertible, all power equipment, Merc-O-Matic, \$400 and take over payments. DA 4-0353. A

OLDSMOBILE, 1953 Super Holiday 88, power brakes, \$1055, \$300 down. AX 5-3263. A

FORD, 1957 Fairlane 500 Victoria, Ford-O-Matic, power steering & brakes, \$2150. TE 2-4472. A

WASHER, 1954 Blackstone, wringer. DA 6-7015. A

VOLKSWAGEN, 1956 hardtop, \$1500. DA 9-8887. A

AUSTIN-HEALEY, 1956, extras. OS 6-6821. A

REFRIGERATOR, Crosley Shelvador, 10 cu. ft., \$75. FR 9-0953. A

TIRE, 6.00x15, Wards Riverside deluxe, never used, \$10. OR 1-8438. A

CRIB-PLAY PEN, adjustable leas, sides, \$10. DA 3-4118. A

WEDDING DRESS, never used, size 10-12, white chantilly lace, tulle, lace appliques, \$50. OS 6-4255. A

HOUSE TRAILER, 1949, 22' shop made, cottage-type unfurnished, needs repairs. OS 6-5965. A

## FOR SALE

BOAT, Collinscraft, 12', glassed, steering, motor, trailer, many extras, \$350. PL 4-4384. A

BOSTON TERRIER, male. OS 5-9695. A

HOUSE TRAILER, 1952 Aljo, 16', water tank, pump, electric brakes, butane stove, oven, spare tire, \$675. OS 6-9914. A

HARD TOP, Carson, for XK 120 coupe. FR 9-3128. A

FORD, 1952 customized, new paint, leatherette interior, 53 Mercury engine with 3/4 race cam, bore, take over payments \$21.75 month, equity free. \$375. NE 8-1076. A

CAR RADIO, 1956 Motorola, aerial, \$20. PL 6-0284. A

FRIGIDAIRE, 1955, 9.3 cu. ft. \$125. TE 1-2077. A

BUICK, 1956, special Riviera, Dynaflo, \$1750. FR 2-0077. A

ACCORDIAN, Fonatella, 120 base, 2-key, case, like new, \$100. PL 6-9775. A

MOTORCYCLE, 1953 Velocette. OS 5-1835. A

REFRIGERATOR, Kelvinator, 9 years old, \$50. PL 4-6146. A

RANGE, Hotpoint, automatic, electric, \$30. FR 5-9612. A

BABY CRIB, spring, mattress, OR 7-7910. A

PORSCHE, 1957 Speedster 1600, extras, under current market price. FR 8-2591. A

CRIB, mattress, w/cover, \$25. FR 9-8048. A

WASHER, Whirlpool, conventional, \$15. OR 1-5279. A

PUPPIES, mixed, small, \$5. FR 2-9051. A

OVERCOAT, man's, heavy, dark blue, size 42-44, \$10. GR 7-1539. A

MOVIE EQUIPMENT, De Jur 8 mm. camera, 8 mm. projector, 30"x40" screen, light meter, \$100. FR 4-6126. A

BORGWARD, 1958 TS sedan, extras, 1 month old, less than 2000 miles, still under warranty, \$2650. KE 5-6650. A

CAMERA CASE, for Bell & Howell 8 mm. movie camera, w/filter, \$45. RE 2-9259. A

TRAILER, 15' Bellair Skyliner, Sportsman, birch interior, sleeps 5. OR 2-2093. A

HOUSE, 2-bedroom, w/w carpets, disposal, patio, fenced. DA 9-5474. A

SOFA, used, w/coffee table, Lawson style, \$35. OS 6-8471. A

HOUSE, 3-bedroom, disposal, w/w carpeting, fireplace, covered patio w/walls, fenced yard, brick flower beds, 2-car garage, work bench, corner lot, dead-end street, near schools, Torrance. FR 6-2504. A

CESSNA 140, 1/5 interest in, based at Torrance airport, \$500. FR 8-2145. A

RACERS, 2 quarter midact cars, trailer. LA 2-3292, Buena Park. A

MODEL A, 1930, extras. PL 6-7566. A

RUG, Chinese, hand hooked, light background, floral pattern, 12'x18' w/pad. FR 7-2294. A

TRAILER HITCH, Perfect Tow, for house trailer, \$90. OR 1-7940. A

SAW, DeWalt, 9" blade, 2 mos. old, take over \$11.20 mo. payments or \$195. OS 5-8982. A

CADILLAC, 1952 8 pass. limousine, extras, \$1495. PL 7-2719. A

CERAMICS, includes greenware, bisque, finished pieces, glaze, all colors. EA 2-4044. A

REFRIGERATOR, Servel, double-door, 4' length, \$25. OS 5-7414. A

RELAX-A-CISER, \$50. FR 7-1844. A

HOUSE, modern, 2-bedroom, GI resale, w/w carpet, weather stripped, copper plumbing, concrete slab in for extra room, near Northrop, \$11,950, low down payment. FR 6-0645. A

FORD, 1955 country sedan, Ford-O-Matic, \$1595. DA 6-0895. A

APPLIANCES, refrigerator, range, \$30 each. FR 5-8625. A

HI-FI TAPE DECK, Vikinga, w/record-playback amplifier. OR 8-6973. A

RANGE, Tapan, gas, 2 years old, griddle, clock, timer, glass door. GE 1-0768. A

REFRIGERATOR, Coldspot, 9.5 cu. ft., \$50. GA 3-3892. A

CHEVROLET, 1953 Bel Air, sport coupe, Powerglide, \$700. OR 4-6816. A

ALUMINUM, 13 sheets, .019x26.00x144.00 lona, 2 1/2" corrugated, \$40. PA 1-8492. A

SECTIONAL, 3 piece, foam rubber, green. \$95. DA 3-1479. A

REVOLVER, Colt, 38 Police Special, 5" barrel, belt, spring clip, holster, fired once, \$60. WE 4-0165. A

OLDSMOBILE, 1950, \$400. AX 4-1925. A

FURNITURE, refrigerator, 8 ft. electric, and 36" gas range, both \$125. PL 4-7912. A

SILVER SERVICE, Rogers 1847, Remembrance pattern, 12 place settings, 6 pcs. each. AX 2-1793. A

BOX TRAILER, 7x4, 3' solid sides, metal hoops, lights, 1958 license, \$35. OS 6-7860. A

SHOTGUN, Brownina auto., 12 gauge, cae, cleaning kit, Matt rib sight, polychoke, recoil pad, \$100. AX 4-9182. A

BICYCLE, boy's, 26" wheel base. OR 7-5080. A

FORD, 1936 coupe, beat, but runs, \$30. OW 7-8046. A

TIRES, 4, 5.90x15 Dunlop Road Speed, 2 w/Reynolds retreads, \$7 each. EX 7-9900. A

BICYCLE, boy's 26" \$15. GA 3-1363. A

FURNITURE, house full, must sell, includes deep freezer, range, refrigerator, television set, living room suite, bedroom set, dining set. PL 2-5217. A

## FOR SALE

FURNITURE, refrigerator, wrought iron dinette, living room suite, gas range, \$25 equity, balance of \$453, \$25.22 mo. Box 906. A

CHEVROLET, 1954 Del Rey, Powerglide, power steering, electric windows, leather interior, \$750. TE 1-1971. A

STATION WAGON MATTRESS, plastic foam, cut to fit, \$37.50. OR 2-8955. A

OUTBOARD ENGINE, 3 h.p. Evinrude, used less than 5 hours. TE 2-6156. A

TRIUMPH, 1957 TR3, tonneau cover, \$2200. FR 2-3092. A

BOAT, 13', fiberglass, controls in, 14' trailer, \$350. OS 9-3984. A

CAMERA, Pacemaker Speed Graphic, 3 1/4x4 1/4, all accessories, case, \$125. OR 7-2315. A

TRIUMPH, 1956, \$1850. PL 4-7158. A

DIAMOND RING, man's, \$100. PL 6-0242. A

## WANTED TO BUY

FORD OR CHEVROLET, best 1951 or later. \$250. PL 6-1898. B

SHOTGUN, 410, make or age unimportant, cheap. Box 916. B

DOG, small, short-haired, female. O.K. if spayed, ancestry unimportant. Fenced yard, childless couple. Box 915. B

OUTBOARD MOTOR, 35 to 40 hp., controls. FR 9-9570. B

HOUSE, 2 or 3 bedrooms, Inglewood, Hawthorne, Gardena area. PL 2-9597. B

TONNEAU COVER, for 1957 Ford convertible. FR 4-4140. B

STATION WAGON PAD, for 1956 Ford. HO 2-5012. B

AQUA LUNG, complete outfit. DA 9-7223. B

SALES, Snipe class. HO 5-1380. B

SEWING MACHINE, Kenmore, buttonholer, portable, 2-3 years old. PL 6-7566. B

FORD TRUCK, late model, sportsman's top, will trade. Box 907. B

## FOR TRADE

AQUA-LUNG REGULATOR, two-stage demand type, or Remington .22 automatic rifle, or both, for 1932 Ford front fenders and radiator shell, in good condition. FR 6-3265. C

CHEVROLET, 1957 Bel Air, will trade for transportation car, \$2114, take over payments, \$88.98. OX 9-7308. C

## FREE (to be given away)

DACHSHUND, female, AKC, free to dog lover for half of first litter, not good with small children. TO 7-8588. D

## RENTALS OFFERED

APARTMENT, unfurnished, 2 bed-room, near Crenshaw, \$100 mo. OR 7-4021. E

APARTMENT, bachelor, furnished, 2 rooms, bath, private entrance, North Inglewood. OR 7-0724. E

APARTMENT, young man with apt., Imperial-Crenshaw area, share with other young man. Box 908. E

SHARE APARTMENT, Hollywood Riviera, bachelor 25 wishes to share apt. with 1 or 2 of same, near beach, garage, disposal. Box 909. E

APARTMENTS, north of Rosecrans shopping center, 1 and 2 bedroom, unfurnished, new, w/w carpets, drapes. OR 7-4748. E

APARTMENT, new, North Inglewood, 2 bedrooms, unfurnished, \$97.50. OR 1-8034. E

DUPLEX, 2-bedroom, unfurnished, 1 or 2 children O.K., near schools, Northrop. Box 911. E

APARTMENT, furnished, bachelor, no kitchen, newly decorated, near Northrop, \$55 mo., utilities paid. OS 6-3326. E

HOUSE, 3-bedroom, 1 1/2 baths, service porch, fireplace, venetian blinds, disposal, patio, double garage, \$145. OR 2-7775. E

## RENTALS OFFERED

ROOM, near Northrop, \$10 week. OS 5-3787. E

DUPLEX, new, 1-bedroom, disposals, unfurnished. DA 9-9075. E

APARTMENT, furnished, single, near transportation, Redondo Beach, \$62.50, utilities paid. FR 4-8792. E

SLEEPING ROOM, private entrance, off-street parking, \$32 month. Box 910. E

ROOM, man, \$10 week. OR 4-5702. E

TRAILER SPACE, for modern trailer, \$22.50. NE 8-5715. E

CABIN, Crestline, day or week, accommodates 18 people. OS 6-6074. E

APARTMENT, newly decorated, 2-bedroom, Hawthorne, \$85, water paid. OS 6-7860. E

APARTMENT, 1 bedroom, unfurnished, Hawthorne. OS 6-7689. E

## RENTALS WANTED

HOUSE, 3-bedroom, Inglewood - Hawthorne, rent with option to buy, \$100 mo. OS 6-5218. F

HOUSE, 2-bedroom, Southwest area, unfurnished, have 1 child, references, \$80. PL 6-7566. F

HOUSE, 2-bedroom, Hawthorne, have son, 12, \$90. OS 5-7459. F

## PERSONALS

NEED RIDE to El Camino College from Northrop Engineering Center, Tuesday, Thursday, 4:45 p.m. only. Box 912. L

WANTED, woman to share 5 room home with same. OS 6-6497. L

## FOR SALE OR TRADE

BUICK, 1954 Special 4-door, Dynaflo, low mileage, \$1095, or trade for 1955 or 1956 Chevrolet or Ford station wagon. OS 5-9054. M

FORD, 1956 4-door town sedan, T-Bird engine, power steering, 29000 miles, \$1650, terms, will trade for newer car. OS 5-7414. M

HANGING RACK, Revere, large size, \$5, or trade for aquarium, Lazy Susan, magazine rack, pitch fork. TE 2-6156. M

CHEVROLET, 1956 convertible, trade for 1956 T-Bird. FR 6-5087. M

FORD, 51, 4-door, overdrive, trade for portable TV, tape recorder, HO layout or other. Cash difference. OS 5-6012. M

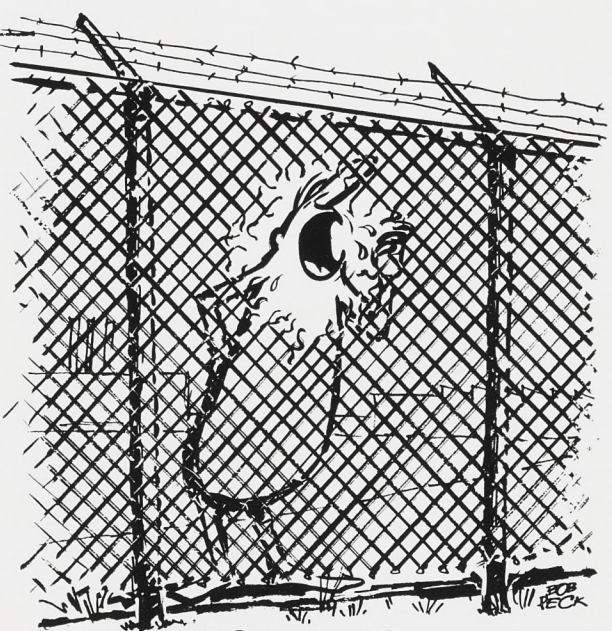
CABIN CRUISER, 26', Lowmen hull, bait tank, 100 h.p. engine, for car, pick-up or equal equity. TW 3-3146. M

OLDSMOBILE, 1951 98 Deluxe, will accept cash and trade for 38 revolver, 16 mm. projector, automatic washer, 22 rifle, typewriter or other. Lambert 5-6027. M

OLDSMOBILE, 1955 Holiday coupe, power brakes, steering, \$200 for my equity or trade for older car, take over payments. OS 6-5218. M

HUDSON, 1948, new battery, sell or trade for blonde piano or 21" blonde TV. OS 6-1748. M

Give To  
Charities  
The United Way  
Through A-I-D  
Associated  
In-Group  
Donors

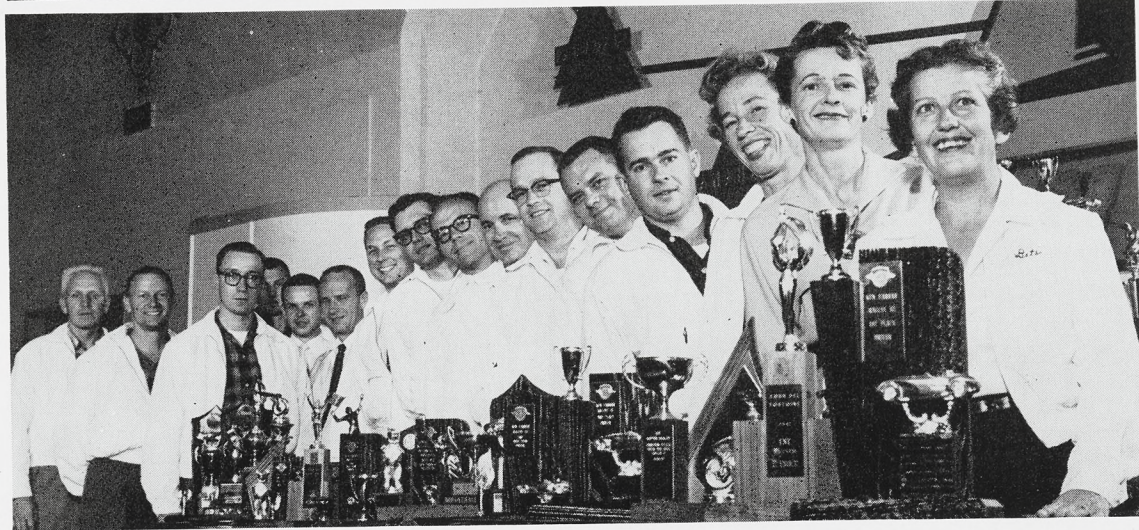


THE BIGGEST HOLE IN SECURITY  
IS AN OPEN MOUTH!



## SPORTS

The Northrop News



**RALLYE TEAM TROPHIES**—Year-end display of winnings by Norcrafters, from left, C. K. Enoch, Doug Hugill, Frank Kranz, Bill Hanna, Doug Linder, Bob Nichols, Gordon Madison, Karl McCready, Jack Kirkpatrick, Hal Guess, Ward Brannon, Jim Minter, Dick Oliver, Vee Hugill, Ann Nichols, Betty Enoch. Absent: Dick Flude, Bert Johnston, Dave Conklin, Milt Sumner, Virge and Virginia Herman.

## NRC Sports Car Rallye Team Holds 62 Trophies for 1957

A record-breaking trophy year was set by the NRC Sports Car Club Rallye Team.

In about 20,000 miles of championship rallye driving during 1957, 42 members copped a whopping total of 62 trophies, according to Hal Guess, team master.

Here's the way the team stacked up against other Southland drivers in seven big trials:

Nine cars in the Don Diego VII took six trophies. Seven in the Lockheed 24 won 14. None in the Great Western. Ten cars in Over the Hill won six awards. Seven in the Ken Farrar took 16. Nine in the Big Bear for 8 trophies. And eight entries in the Desert Rallye swooped 12 awards.

In ten open rallyes, the team collected 38 trophies, reported Guess. Of fifteen members who won points in the Southern Cali-

fornia Council of Sports Car Clubs individual championship, three were in the trophy class—Bill Hanna and Dick Flude, were named top driver and navigator; Hal Guess was listed as ninth top driver.

## Trophies, Cash Prizes Due Bowling Tournament Winners

More than \$1000 in cash awards and 35 gleaming trophies await the winners of the recent NRC holiday bowling tournament.

Official results of the West's biggest industrial bowling event have been tabulated from the more than 1000 entries in the three-day tourney. A complete list of winners was published last week and the cash prizes are available for pick-up at Personnel Activities Office, Plant I. Trophies will be ready next week.

For the record, these were the names listed as top winners in each class:

Men's team: Wally Muth, Harry Warner, John Kommers, Ross Earp, Ian MacLauchlin.

Women's team: Joan Sittauer, Lee Hopkins, Lil Dotson, Peggy Bortner, Jerry Reeder.

Mixed team: Elfie and Dave Lipscomb, Georgia and Willis Stroub, Tom Meehan.

Men's class A doubles: Stan Eckland and Sam Collins. Men's class B doubles: R. P. Christian and Roy Steinthal.

Women's class A doubles: Lucille Beitzwell and Betty Stanton. Women's class B doubles: Virginia Harbold and Lucille Kocher.

Mixed doubles class A: Glenn Mai and Daisy King. Mixed doubles class B: Vern and Shelia Woodmancy, father and daughter team.

Husband & wife class A: Phil and Jerry Reeder. Husband & wife class B: Norm and Bee Barkley.

Men's singles: Gene Barker. Women's singles: Elfie Lipscomb.

Men's all-events: Bud Cheshire. Women's all-events: Elfie Lipscomb.

## FISHING AWARDS TO BE PRESENTED AT FEB. 4 MEET

Presentation of trophies for the largest surf fish caught during 1957 will be made at the February 4 meeting of the NRC Surf Fishing Club.

Awards will be made for the largest fish in each of six species, commissioner John Pawlicki stated. There will also be a presentation of the Southwestern Angling Trophy for the largest fresh water fish caught during the year.

Feature of the meeting will be a talk by guest speaker Jack Carlisle of the California State Department of Fish and Game.

Scoring honors for men's high scratch series went to Gene Barker's 667 and for women's high scratch series to Laverne Nelson's 585.

**CHAMPS**—Winners in the Torrance Table Tennis Tournament were, left to right, Ronnie Winningham, 1st; John Banerian, 2nd; Ray Hofius, 3rd. Over 40 players competed in tourney.

## Production Control Tops Night Shift Hoop Teams

Final official team standings in the NRC night shift basketball league list Department 5336, Advanced Production Control, as champs with a six-win, no-loss record.

Roster of the undisputed winners in the four-team league includes: Lew Winkler, Bill Davis, Jerry Ott, Ronnie Abersold, Robert Moncrief, C. W. Triplett, Willard Buchanan, and Ron Hase. League high scorer was Fritz Armenta who tallied 95 points in five games.

Department 5336 is biding time until the final outcome of the day shift league playoffs. Then they'll return to the court for the All-Plant Championship contest. A group of second shift players have formed a team currently competing in the L. A. County Industrial League.

Leading contenders in the day shift leagues are Department 3310, Fluid Dynamics; Department 1233, El Segundo Fire Serv-

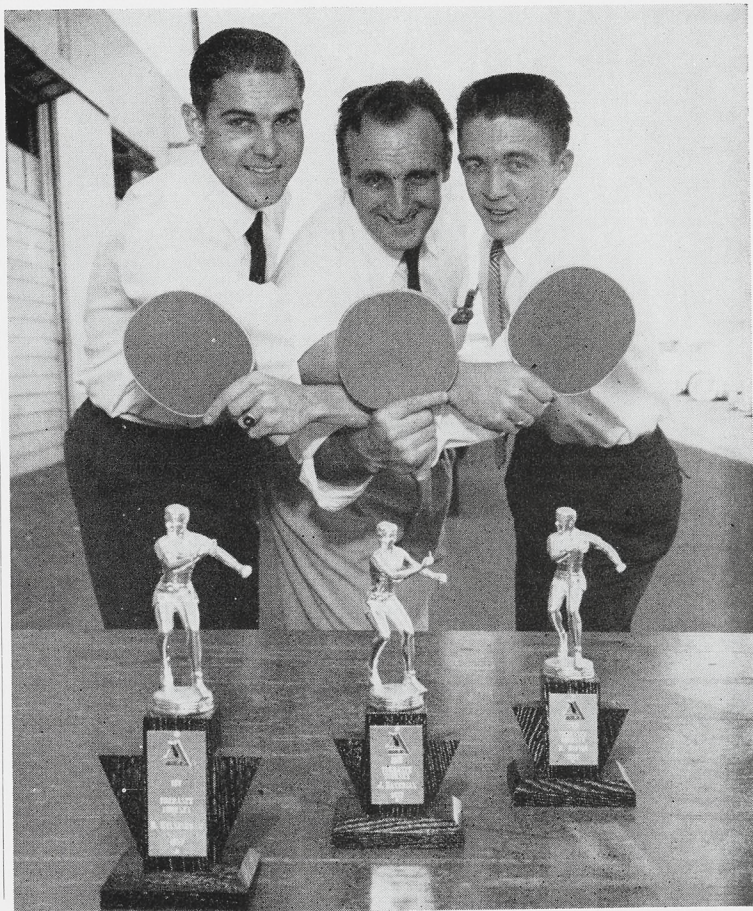
ice; Department 5563, Boeing Wing; and Department 3410, Liaison Engineering. As of last week's game, Fluid Dynamics was undefeated in ten tests.

Plant Championship playoffs are slated for the latter part of February, according to commissioners John Mihelich and Dave Carney. Scheduled date will be announced, they said.

## Special Night For Northrop

Northrop Night at the Hollywood Palladium will be featured Friday and Saturday, February 7 and 8, it was announced by Harry Clark, general supervisor, Personnel Activities.

On the bandstand will be Harry James and his music makers. Tickets are now on sale at the 75 cents per person, special price, at all Personnel Activities offices.



## NRC Good Time Table for February

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted

**ARCHERY (days)** Jack Duer  
Meet Wednesday, 6:30 p.m. Archery classes now in session.

**ARCHERY (nights)** Mickey Mechling  
Meet Wednesday, 12:15 p.m.

**ART CLUB (days)** Milton Maldenada  
Meet in Annex every Thursday, 7 p.m. Models furnished by NRC. Sculpture class meets every Wednesday, 7:30 p.m.

**BASKETBALL (days)** John Mihelich  
Play Mondays and Wednesdays at Washington Gym. Play-offs at Washington Gym, February 24, and 26.

**BASKETBALL (nights)** Dave Carney  
Plant Championship end of Feb.

**BIBLE STUDY** Roy Stahl  
Plant I—Daily, 11:30-12:15. Training Conf. Room, Tool Design Bldg., 11-11:45, 5587 Conf. Room.  
Plant II—Mon. & Thurs., 12:15-1 p.m., Conf. Room 2.  
Plant III—Daily, 12:15-1 p.m., Conf. Room 5.  
Torrance—Tues. & Thurs., 11:30-12:15, Bldg. K2 Conf. Rom.

**BOAT CLUB** Steve Sabo  
Meet 1st Wednesday of month, 7:30. Night shift meets 3rd Thursday of month, 2:30 p.m. Water Ski Club Days meets 3rd Thurs., 7:30 p.m. Safety meetings every Thurs. at the U.S. Naval Reserve Training Center, 201 W. 126th St., Hawthorne, (Cor. of Greville Ave.) 7:30

**BOWLING (days)** Lloyd Forstrom  
**BOWLING (nights)** Charlie George  
Winter leagues now bowling

**BOY SCOUTS** Stan Morris  
Sea Scouts, Intermediate, Cub Scouts, All Norcrafters boys welcome.

**CAMERA CLUB (days)** Steve Marstaller  
Meet 1st and 3rd Wednesday, 7:30 p.m.

**CAMERA CLUB (nights)** Gene Beck

Meet 1st and 3rd Saturday of month, 8:15 p.m.

**FISHING (day and night)**

Register fish for NRC awards with card available at Personnel Activities.

**GEM & MINERAL CLUB (days)** Raymond Cole  
Mineralogy class now in session. Meet every Thursday, 7 to 9. Second 15-week session to start Jan. 30. Sign up now at Personnel Activities.

**GEM & MINERAL CLUB (nights)** Victor Lincoln  
Meet 1st and 3rd Wednesday of month, 1:30 p.m.

**GOLF (days)** Charles Pinegar

**GOLF (nights)** Leo Baker

Individual practice for summer leagues and tournaments.

**GUN CLUB (days)** Carl Turner  
Meet 3rd Wed. of the month at 7:30 p.m. Pistol shoot at Torrance, 2 p.m., each second Sunday. Rifle shoot at Torrance, 1 p.m., each third Sunday. Shotgun shoot at Dominguez Gun Club, Saturday, Feb. 1 and 15, 10:30 a.m.

**MIXED CHORUS** Bill Porter  
Meet every Tuesday 7:30 p.m. All Norcrafters welcome.

**MODEL RAILROAD** Jack Wilson  
Meeting every Thursday evening from 7 to 10 p.m. in Annex. Visitors welcome.

**PHILATELIC** Robert Van Rensselaer  
Meet 2nd and 4th Mondays, 7 p.m.

**RADIO CLUB (days)** Phil Kramer  
Meet last Thursday of month in Annex, 7:30 p.m. Radio Code Class meets every Wednesday evening, 7:30 p.m. NRC's Station is W6VPZ.

**RADIO CLUB (nights)** Merwin McGrew  
Meet the last Thursday of the month at 1:30 p.m.

**SKET CLUB** Harold Bowers  
Meet ever other Saturday at Long Beach Dominguez Gun Club on Artesia Blvd. 10:30 a.m. Feb. 1 and 15.

**SKI CLUB** William Loomis

Meet the 2nd and 4th Wednesday of the month at 7:30 p.m.

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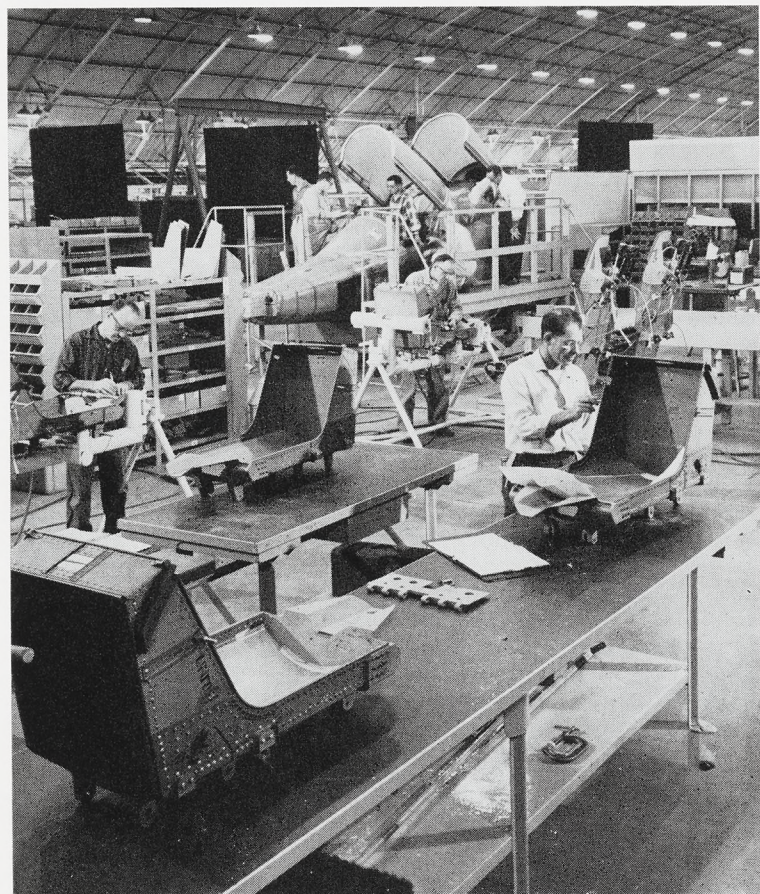
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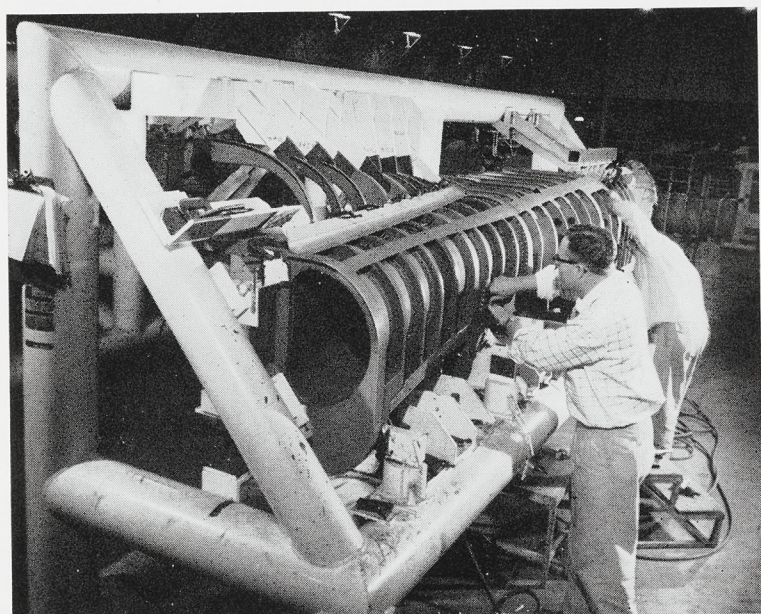
**TOASTMASTERS 212 (days)** John Langdon  
Meet every



# Northrop News Pictorial



**T-38 HARDWARE**—Taking shape in the T-38 prototype assembly department are components for programmed test units. Foreground, crew seats and Norcrafters Charles Acord, Jim Wilson, and Roy Meek, inspector, right. Preparing sled test unit for rollout, background, from left, leadman Harris Stone, engineer C. D. Van Der Mark, Clyde Chase, Lawrence Cabasino, D. B. Gibson, and Reed Clark, assistant foreman. Sled test unit, now complete, is being instrumented. See photo, Page 1, of T-38 rollout.

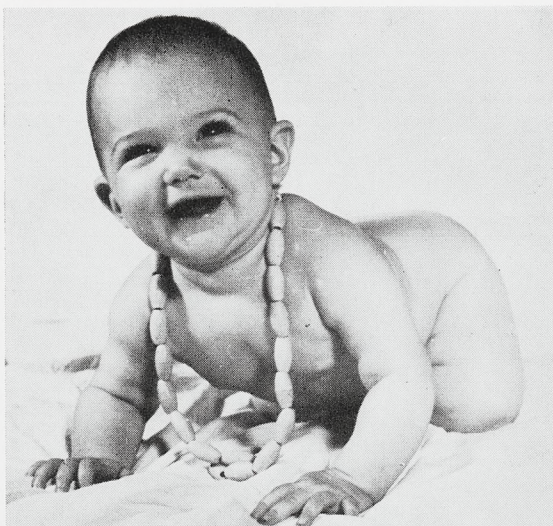


**"COKE BOTTLE" CURVE**—T-38 left rear side panel and engine inlet duct assembly shows portion of the area rule reverse curvature fuselage design. On assembly job are Everett Malcomb, Vernon Hancock.

## Science Goes to Hamilton Hi



**HONEYCOMB** — Senior physics students at Alexander Hamilton High School gather around Northrop lecturer Al Binsacca to examine piece of honeycomb and to hear how this new product is used in aircraft industry. Left to right are Binsacca, Bruce Abell, Cheryl Cunningham, Jeff Breiseth, Richard Weisbart, Dennis Fisher, Janet Bratemarkle.

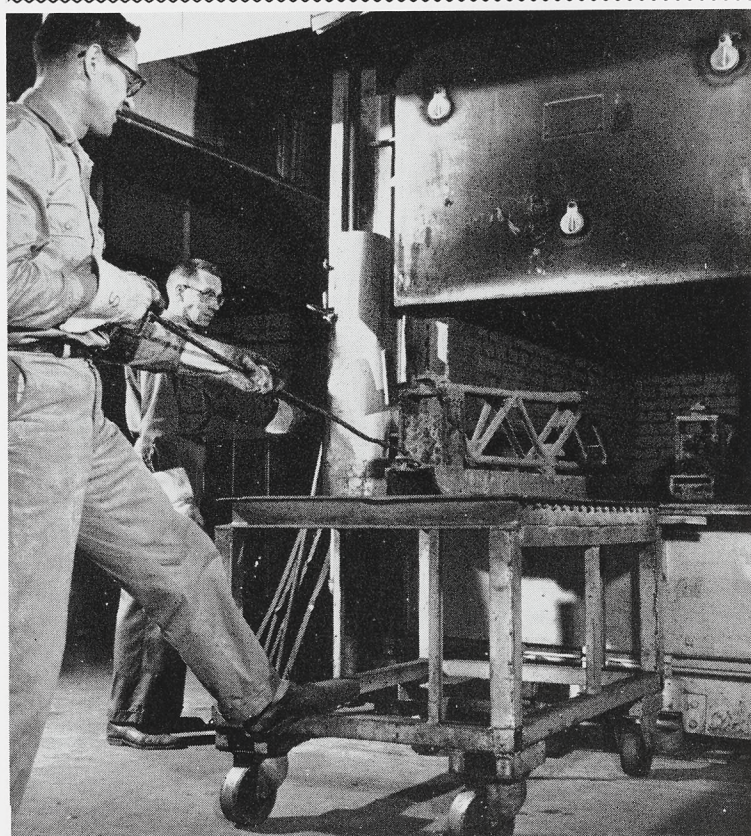


**ONE PICTURE IS WORTH**—New decal for handling delicate and valuable instruments is calculated to impress one and all that such equipment requires precious handling. Decals are available through Conservation department—at no charge to budget. The baby—she is none other than Alison "MacDuff" Hopkins, bouncing granddaughter of proud "Hop" Hopkins, editor of plant Conservation Digest.

Howdy, Folks - - !



**PACE SETTERS**—Air National Guardsmen, 124th Fighter-Group at Boise, Idaho set a 1957 flying time record of 4116 hours with their Northrop F-89 Scorpions—so reports Northrop tech rep Max Wenzl, left front. Right front is Captain John M. Flaherty receiving congratulations from Major Kenneth E. Nording, 190th Fighter-Interceptor Squadron Commander. Watching, Colonel Martin H. Johnson, 124th Fighter Group (AD) Commander. Group aircraft mechanics and specialists pose proudly.



**COME AND GET IT**—Norcrafters Stan Ruditis and Gordie Marks of steel heat treat department, check pylon frame being normalized in high temperature oven. Normalizing evens stress caused from welding, transforms pylon from a part made up of many pieces to a single piece high-strength unit capable of withstanding sonic stresses.



## NEWS BRIEFS

**SNARK FLIGHT**—Bad weather over the South Atlantic which kept other missiles from leaving their launch pads did not deter the Snark. The most recent flight, 25 January from Cape Canaveral to Ascension, was successful 100 per cent. The missile was flown under automatic guidance. No significant functional problems were encountered. Terminal accuracy was within the design specifications, in other words—a bull's eye. Said George Douglas, vice-president, Engineering, "This is three successful flights out of three. We have not compromised with anything short of taking the most extreme measures to insure reliability."

**STREAMLINING GETS BENEFITS**—Al Morgan, vice-president, Contracts, for the Northrop Division, reports that consolidation of all of the various elements of Service—Publications, Logistics, Customer Training, Operations and Administration, provides a better cost picture and makes possible project savings as anticipated. Illustration: \$930,000 savings — out of \$2,000,000 — have been effected in the T-38 trainer handbook concept. Original concept was informal handbooks with follow-on of formal handbooks for first airplanes in the contract. This has been changed to informal handbooks for the first airplanes, plus supplements for additional airplanes. Formal handbooks will be issued when follow-on production airplanes become operational. At Torrance, under the Customer Service consolidation, buildings K-2 and K-3, by simple device of a fenced corridor, have become one unit. Result: one security control, no receptionist required.

**COSTS**—Vice-president and General Manager, Robert R. Miller states that indications show a declining trend in cost consciousness throughout the various Northrop divisions. "This attitude will not get the job done," he said. "I am asking all division heads to re-evaluate their cost reduction programs and institute measures, if necessary, to bring cost reduction back into sharp focus" . . . Brighter area in cost program is that a good relationship has been maintained between direct and indirect costs in spite of recent reduction in plant workload. Dark areas in cost picture, to name a few, are plant supplies, travel, telephones, inventories.

**T-38**—The T-38 is an airplane that has used "state-of-the-art" knowledge in all aspects of the program. As a typical example of this: In order to eliminate the usual flight "bug-chasing" program, with groundings, malfunctions, et al that is the curse of most new aircraft, Northrop engineers are attempting to prove out by wind tunnel and test stand every feature of the T-38 that is "state-of-the-art". For example, those problems encountered up to now in century series aircraft are being scrutinized in every detail. Thus, T-38 unknown factors at flight time will be only the very new and relatively untried technological advances. Valuable flight time will not be wasted in routine checking.

**ENGINEERING LINE ORGANIZATION**—"Engineering organization has as its foundation, five basic areas," states Vice-president George Douglas. "These are Analytical, Design, Development, Flight, and Project Management. Experience of the Northrop chiefs directing the first four of these areas totals 100 years. Authority is delegated directly to these areas. This is the platform for the creation of engineering policy, proposals, and the direction that we take. This authority is a combination of corporate plans, division objectives, plus a lot of brain-picking both up and down the engineering chain. We meet, exchange ideas, look at customer requirements, study the state-of-the-art, evaluate new developments, check the competition, and out of this comes engineering recommendations. These are passed on to management for corporate and division coordination, and, if we have done our work well, the green light . . . The direction that we take is guided by two factors—the way the customer wants to go; and the way we think the customer should go. Usually we are headed in the same direction; (See NEWS BRIEFS, Page 5)

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, February 12, 1958

## Boeing Subcontract Feature Report:

### Norcrafters Help Build America's First Jet Liner

SEE PAGE TWO & THREE

## Snark Capability Cited by Noted British Speaker

The Honorable Randolph Churchill, son of Sir Winston Churchill, praised the U.S. Air Force's Northrop Snark in a talk before the Executives' Dinner Club at Pomona last Thursday night.

Referring to the retaliatory power and the brave men of the U.S. Strategic Air Command as guardians of the free world and the only realistic bulwark between war and peace, Mr. Churchill then spoke about the Snark.

He said the Snark was "a perfected weapon which will fly 5000 miles and put the hydrogen warhead right on target . . . that Snark is the only intercontinental missile ready now . . . that it



RANDOLPH CHURCHILL

requires less men for launching than other systems . . . that Snark costs one-tenth of what it costs to buy, maintain and operate weapons, and compliments these in operation . . . and it can fly under the enemy's radar screen."

Mr. Churchill is a former member of Parliament, a lecturer, writer and author.

## Information Officers in Northrop Visit

Information Services officers from Headquarters USAF and major AF commands visited Northrop on Monday.

The group received briefings on latest Northrop weapon system projects in production and under development, including Snark, T-38 and N-156F. Purpose of the visit was to obtain basis for planning future public information programs.

## THREE NORTHROP ENGINEERS HOLD NACA POSITIONS

Three Northrop engineers have been recently reappointed to committees of the National Advisory Committee for Aeronautics for 1958.

R. B. Davidson, Radioplane, was named chairman of the Subcommittee on Aircraft Loads and is also a member of the Committee on Aircraft Construction.

R. B. Katkov, chief, Fluid Dynamics, Northrop Division, will continue to serve on the Subcommittee on Aerodynamic Stability and Control.

G. N. Mangurian, chief Analytical Engineer, Northrop Division, was reappointed to the Subcommittee on Structures.

## Northrop Placed On 1958 List of Top Managements

Northrop Aircraft has been placed on the 1958 list of Excellent Managements numbering 495 American and Canadian companies, it was announced by the American Institute of Management.

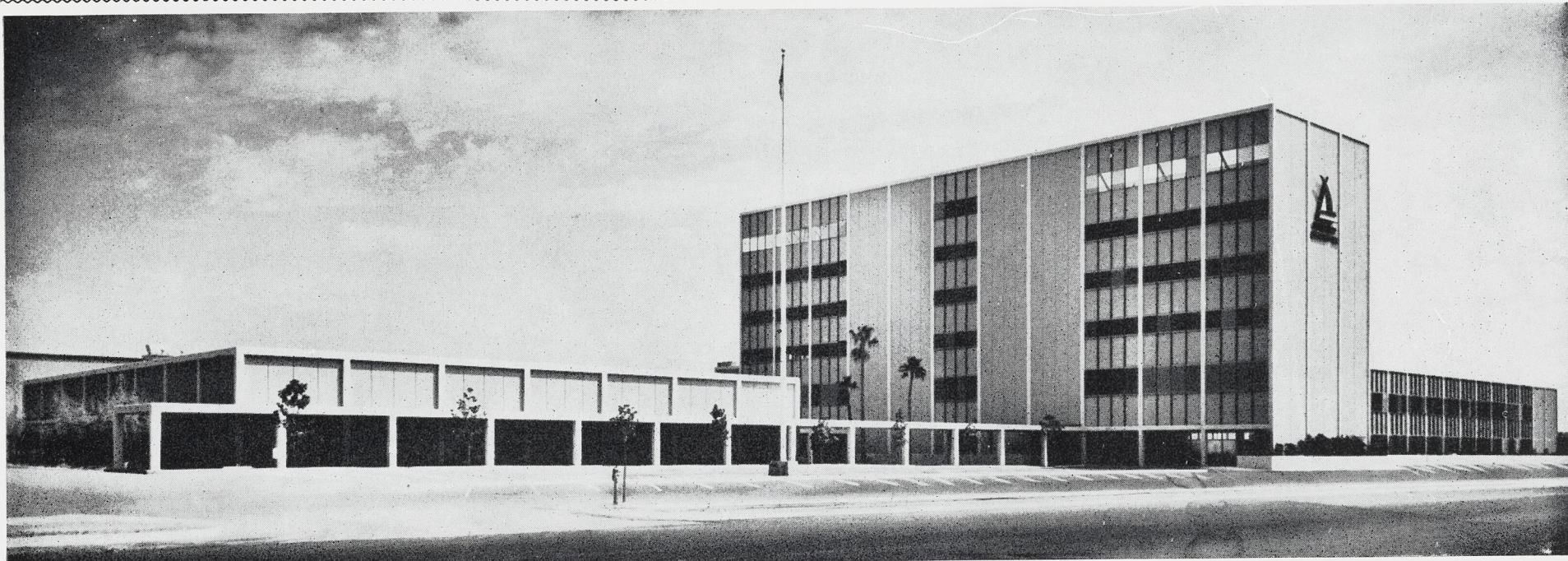
In a letter to President Whitley C. Collins, Mr. Henry B. McNaughton, president of the Institute, stated that an audit committee examination of Northrop's operations and accomplishments for the year 1957 revealed sound management standards in all categories examined. (Photo page 6.)

The ten functional areas on which the management audit was based include: economic function, corporate structure, health of earnings, service to stockholders, research and development, directorate analysis, fiscal policies, production efficiency, sales vigor and executive evaluation.

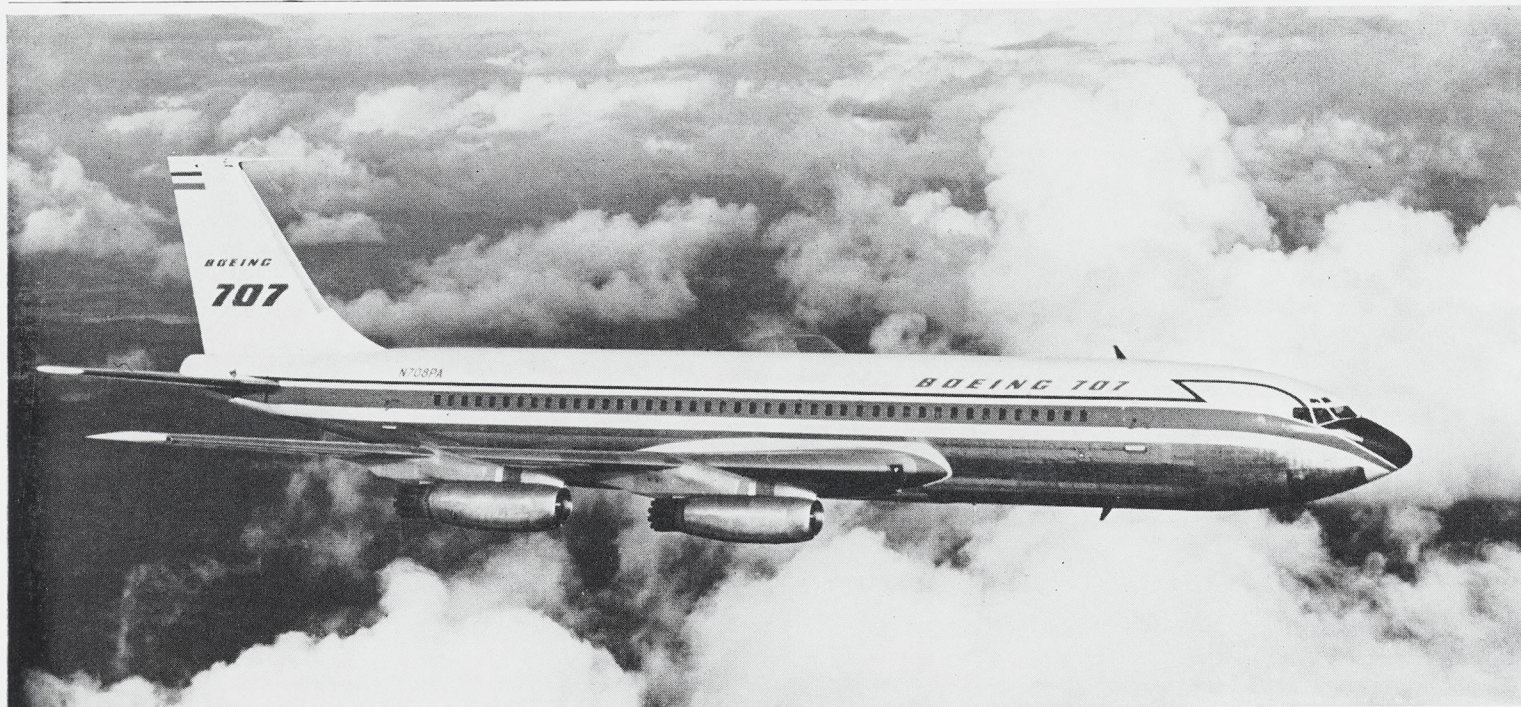
The American Institute of Management is a non-profit research and education organization which seeks to educate management and the public in the principles of excellent management through a systematic, comparative means of evaluating business operations and accomplishments.

## Skyline for Science

**SCIENCE COMPLEX** — At Northrop is new Engineering Building. Winner of recent architectural award, it is hub for engineering activity, work on missiles, T-38 and other engineering projects, including "space age" studies.







**STRATOLINER** — America's first all-jet commercial passenger plane is Boeing's 707 now on order by 14 leading world airlines. Northrop produces outer wings, aft sections for the 707 and KC-135. (Photo below). With 35 degree sweptback wings and weighing 245,000 pounds, this first production model has a span of 130 feet, 10 inches. Fuselage is 144 feet, 6 inches. Cruising speed is 600 mph. Jet-powered 707 will be able to fly New York to Los Angeles in five hours, five minutes total block time.

# Boeing Jet Liner Subassembly Line

## NORCRAFTERS BUILD OUTER WINGS, AFT FUSELAGE FOR 707, KC-135

The date was July 15, 1954. The place was Renton, Washington. A spanking new jet transport prototype took to the skies on the long and critical business of proving out the aerodynamics, structure and systems of America's first jet transport — the Boeing 707.

December 27, 1957, from Renton Municipal Airport, the commercial airliner developed from the Boeing 707 prototype made its initial flight. In it was reflected the years of development and rigorous testing carried out in the prototype.

This Boeing 707 Stratoliner, by means of which United States commercial aviation is progressing through the threshold of the jet age, was of great importance to Norcrafters. They were to build hundreds, and eventually thousands of major structural and assembly components for the

newest stratosphere speed burner.

The new Boeing 707 Stratoliner was destined for great things from the very first.

First order came in October 1955 when Pan Am bought twenty 707 transports. A month later American Airlines ordered thirty. Then, more orders—from Braniff, Continental, more from Pan Am, Sabena, TWA, Lufthansa, Air India, Quantas, BOAC, Air France, Cubana, Varig, and United. All totaled: 136, plus unannounced firm orders for 26 others.

The 707, with its great speed, solid luxury comfort, reliability and operating economy, was a hit among the world's leading airlines.

The 707 prototype was an entirely Boeing financed development project and when the Air Force evaluated and liked the plane, the program received add-

ed impetus. The Air Force ordered the 707 prototype's military offspring, the KC-135 aerial tanker version into quantity production for early delivery to the Strategic Air Command.

Due to supplant the Boeing KC-97, the KC-135 will provide aerial refueling for the AF's heavy bomber force and new jet fighters.

As 707 and KC-135 business mounted, fulfillment of schedule

**AT NORTHROP**—Production of 707 and KC-135 aft sections underway in Plant 1.

dates became a paramount factor to the success of the program. Boeing turned to the industry to get production assistance from companies with long successful records of meeting schedules with  
(Continued on Page 3)

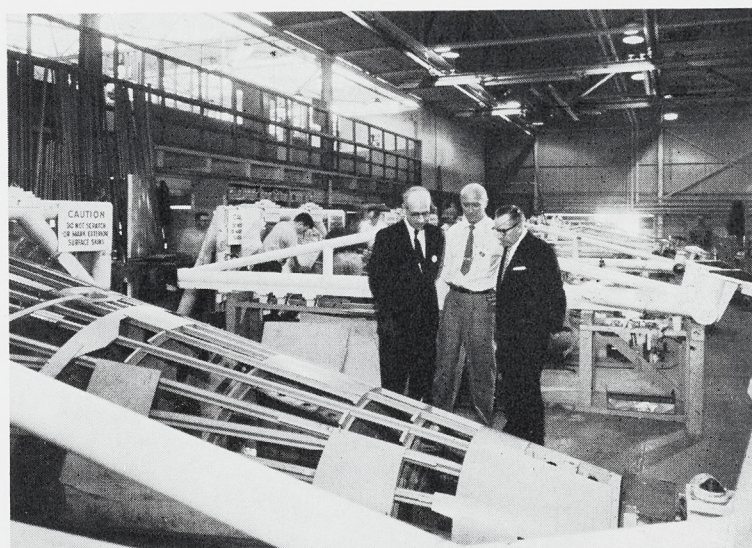
**AFT FUSELAGE**—Manufacturing Control Manager Darrell McNeal, left, and Assistant Factory Manager C. B. Spencer, right, check progress on Boeing aft fuselage with Assembly Department Head Joe Blaire, center.

**AIR FORCE** tanker KC-135 —Outer wing sections, aft fuselage sections built by Norcrafters are plainly visible. On the flight line and dwarfed by the big airplane are from left Boeing's Curtis Blomquist, general

buyer, Materiel, Transport Division; Northrop's Representative Cecil B. Jones; Boeing's Art Ponti, buying supervisor, and Blaine Sampson, group supervisor, both also Materiel, Transport Division. Note flying boom under tail at right.

**FUSELAGE** aft sections—Blue print conference finds Boeing's key men Art Ponti,

Blaine Sampson; Northrop's Cecil Jones; Boeing's Joe Miles—director of Materiel, Transport Division, and Curtis Blomquist on the line with newly manufactured Northrop assemblies, recently arrived. Boeing-Northrop manufacturing relationship is 16 years old—started with Flying Fortress.



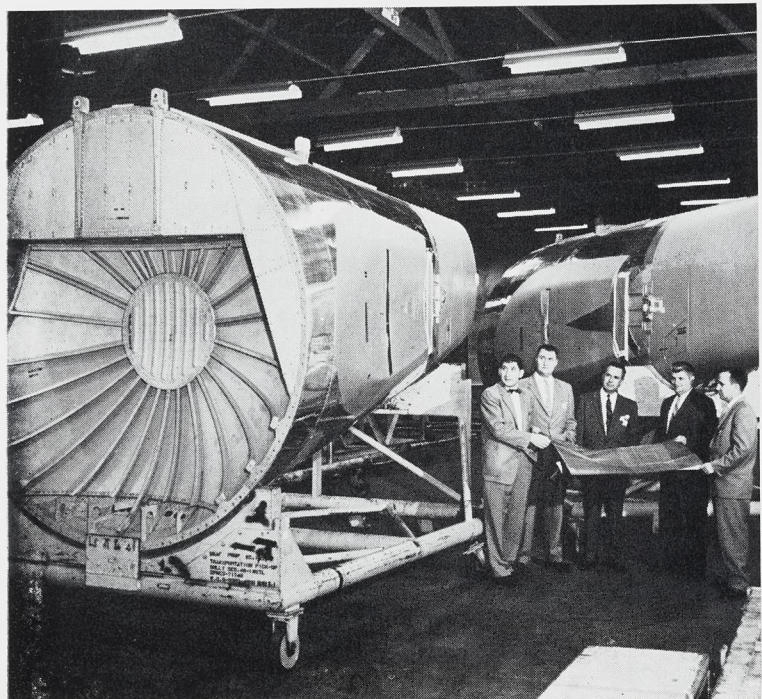
**Northrop News**

Vol. 16 Northrop Field, Hawthorne, Calif. No. 10

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CHARLES BARR, Director

CHARLES BRADFORD, Editor

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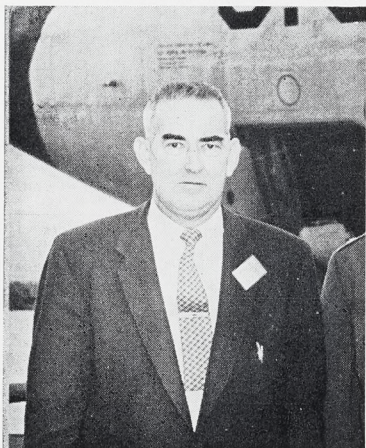


**COORDINATION**—Monitoring of costs and schedules is highly important to Boeing subcontract program. Right, Northrop officials, Gid Kelley, Cost Estimating; Jack Stiehl, manager of Contracts; Dick Nolan, vice-president, Manufacturing; Al Morgan, vice-president, Contracts, meet with Blaine Sampson, Boeing group supervisor, center.

high quality at lowest possible cost. Northrop was among those chosen.

In mid-1955, outer wing sections for the KC-135 and 707 went into production at Northrop's Plant One. In July of last year came the announcement of a new multi-million dollar subcontract for manufacture of aft fuselage sections for both planes.

Northrop was selected for this additional work on a take-over from another airframe company. Deliveries had been lagging. Northrop was to bring the program up to schedule.



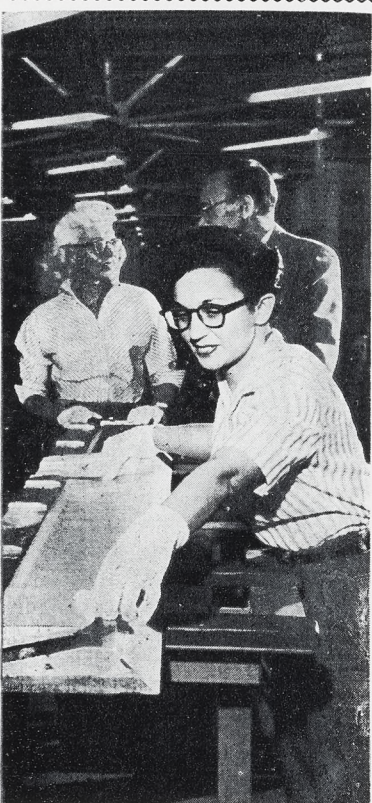
**R. L. REGAN**, Manufacturing manager, Boeing's Transport Division at Renton.

Northrop was to bring the program up to schedule.

Duration of this firm business for Northrop will carry through October 1959 on the KC-135 and through June 1960 on the 707. Substantial additional business in this program is anticipated.

Considered as highly important to the Northrop production program, the Boeing work has received all-out attention from top Northrop management.

Describing Northrop's relationship to Boeing, Richard R. Nolan, vice-president, Manufacturing, said, "On this program, it is our policy to operate as an extension of the Boeing facility in Washington. Our manpower and production effort is in support of the Boeing Company in meeting its schedule and cost commitments."



Mr. R. L. Regan, Manufacturing manager, Transport Division, Boeing Airplane Company, has recently stated that, "Northrop's attitude and approach to their subcontract program as expressed

by Mr. R. R. Nolan is excellent, and is the only possible course to provide successful programs for both Boeing and Northrop in this highly competitive business."

Northrop is not a new co-worker with Boeing. Right after Pearl Harbor, and for all the war years Northrop built components for the Flying Fortress, later the B-50 Superfort, and after the war, the KC-97, early predecessor to the KC-135.

High Northrop skills and advanced production capabilities are being concentrated on the current Boeing program, it was pointed out by Ole Omley, superintendent, Boeing Project.

Extensive use is being made of Northrop's know-how and expanded honeycomb and metal bonding facilities. Honeycomb structures are used throughout the wing, flap, and trailing edges of the Boeing transports. This type of construction has the greatest weight-strength ratio and is the most rigid construction known.

Improved materials handling methods have been adopted to meet the critical requirements of Boeing's 14 airline customers and the USAF as well, for protecting honeycomb structures and exterior surface skins.

Liaison with Boeing is also an area of particular emphasis. Bob Reed, supervisor, Subcontracts, stated that communications with Boeing, though largely informal for timeliness, are keyed to get design changes incorporated on the production line. He said, "Northrop people are on call 24 hours a day on this business to get changes in as rapidly as possible. We're dedicated to get customer changes effective on the earliest ship possible. The most beautiful workmanship goes

**INSPECTORS**—Left to right, Lon Gillster, Boeing; E. F. Forster, AF; Guy Kirby, Northrop; and Lynn Moore, AF.

for nothing if it has to be torn apart for changes prior to flight."

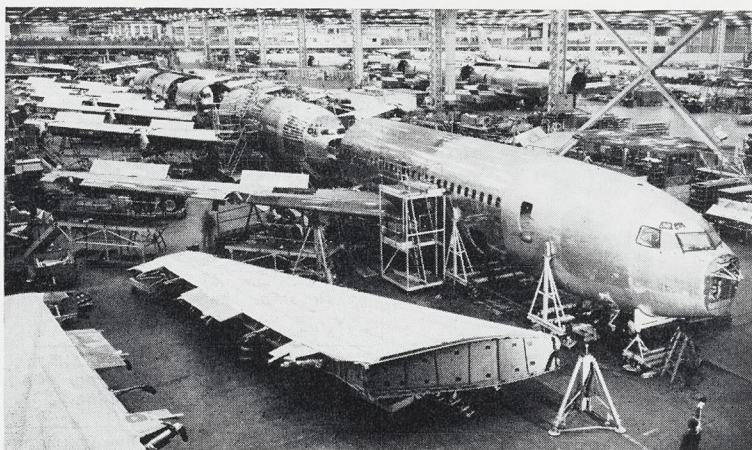
According to Vice-president Nolan, "There's a great deal of emphasis on cost and our cost trends are good." Schedules are monitored continuously to assure on-time deliveries.

Blaine D. Sampson, who is responsible for procurement of the Northrop sections at Boeing, stated that, "There can be no distinction in the importance of costs and schedules in the aircraft business. If our costs are excessive, the customers will be unable to afford our product. If schedules are not met, costs will surely increase."

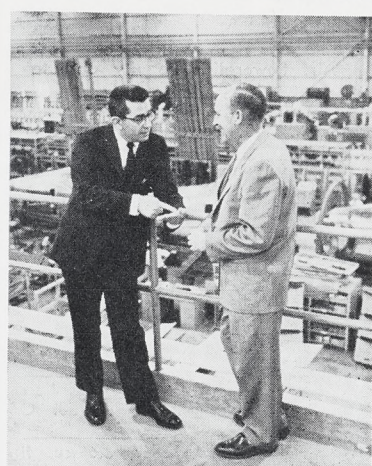
**HONEYCOMB**—Boeing rep Arne Moen checks methods. Stella Dunn and Mary Ann Hoffman prepare trailing edge. Note white gloves.

The first of the KC-135's made its maiden flight on August 31, 1956, slightly ahead of the "early September" promised by Boeing when production orders were signed by the AF. SAC received its first jet tanker on June 18, 1957.

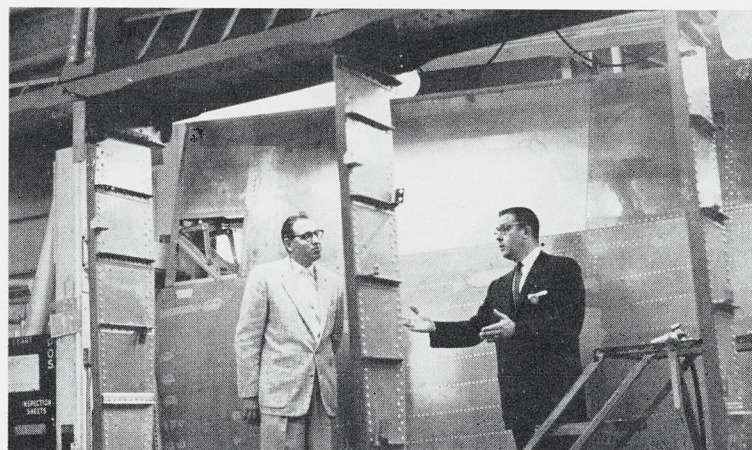
Airline deliveries of the 707 are slated to start late this year with Pan Am heading the list of operators.



**BOEING LINE AT RENTON**—As an indication of the increasing tempo of jet transport production, this photo shows the second production 707 and a number of USAF KC-135 AF tankers on the wing and body joining line.



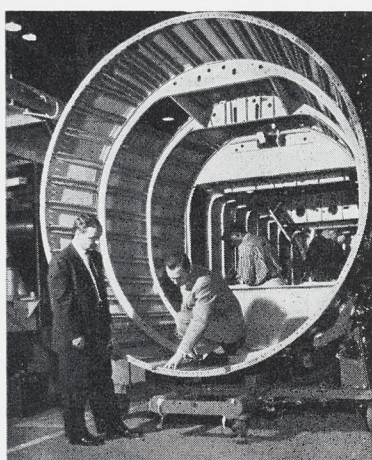
**KEY MEN**—On Boeing program, Northrop's Bob Reed, left, supervisor of Subcontracts, and Ole Omley, Boeing Project superintendent.



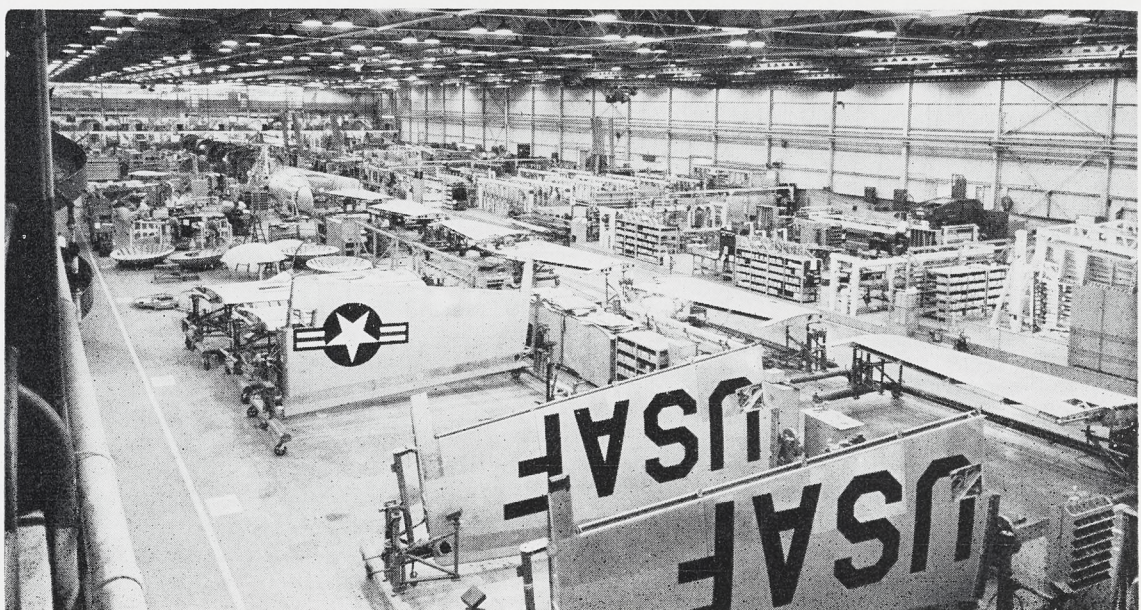
**ON THE SCENE**—Boeing rep Merle Van Fleet, left, and Evret Ellis, Northrop subcontract man on Boeing wing, visit assembly line.



**IN PRODUCTION**—Below is view of Plant One assembly building showing KC-135 wing sections foreground. Right background, wing jigs. Left background, aft fuselage assembly line. In addition, extensive use is being made of Northrop's expanded honeycomb and bond facilities.



**QUALITY CONTROL**—Boeing rep Walt Porter takes close look at aft section in progress. Harry Bates, left, Northrop subcontract man on program. Entire Boeing program is characterized by close coordination of all departments to meet schedule and cost commitments.





# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

PACKARD, 1948 4-door sedan, overdrive, \$75. HA 9-7879. A  
PUBLIC ADDRESS SYSTEM, 15 watt portable, 2 units, 12" speaker, microphone, 3-speed built-in turntable, \$50. GR 2-2031. A  
CHEVROLET, 1950 sports coupe, \$195. OS 6-6604. A  
CHEVROLET, 1956 V-8 2-door sedan, Bel Air, Powerglide, equity and take over payments. OS 6-6093. A  
CHEVROLET, 1955 Bel Air hardtop, Powerpak, V-8, Powerglide, \$1500. PL 6-3439. A  
PLYMOUTH, 1938 coupe, FR 6-4250. A  
STEEL TOWER, 40', galvanized, unused. OS 6-9520. A  
RANGE, electric Frigidaire, 3 burners, deep well cooker, clock, automatic oven, \$75. FR 7-1480. A  
PIANO, Emerson upright practice, you pick-up. \$50. EA 2-1714. A  
PIANO, cut down and rebuilt, \$175. OS 5-9629. A  
HOUSE, 3-bedroom, w/w carpet, hardwood floors, 4 years old, \$14,950. OS 5-9629. A  
REFRIGERATOR, Kelvinator, 8.6 cu. ft., \$50. GR 9-5653. A  
BREAKFAST SET, chrome, DA 4-5112. A  
RANGE, gas, \$40. OS 6-8444. A  
DODGE, 1952 Coronet 4-door sedan, \$425. Box 917. A  
BICYCLE, lightweight boy's, 26", 3-speed. PL 2-9597. A  
BOAT, 8' rubber, wooden engine mount & seats. DA 9-8887. A  
STUDEBAKER, 1955 sport coupe, power steering, automatic shift, 4-throat carb., \$1050. UN 3-3075. A  
TACHOMETER, Stewart-Warner electric vacuum, light, 4 1/2" face, \$40. Box 918. A  
RECORD CHANGER, Webcor, 4-speed, chrome top, Sonotone Super-Fi cartridge, \$45. DA 6-5516. A  
AUSTIN-HEALEY, 1954, new paint, wire wheels, extras, \$1800. TE 3-4156. A  
PUPPIES, Dachshund, AKC registered, miniature and standard. DA 4-2928. A  
ENGINE, V-8-60, hopped v.p., converted to marine use, ready to install, \$150. NE 8-7682. A  
CAMERA, 4x4 c.m. Rolliflex, 2.8 Tessar, 5 Harrison around filters, shade & meter, \$65. LU 2-6790. A  
FORD, 1954 custom coupe, \$200 for equity, pick up payments \$41.52. DA 6-8747. A  
TYPEWRITER, Royal quiet deluxe portable \$60. OR 4-4891. A  
WASHER, Hotpoint automatic, with delicate fabric cycle control, \$100. PL 5-4759. A  
RADIO - PHONOGRAPH combination, Sparton, 78 r.p.m., bleached mahogany, \$25. OR 7-8775. A  
COCKATIELS, well trained whistling male, good mating female. OS 5-7340. A  
PHONOGRAPH RECORDS, 78 speed, originals by Miller, Crosby, Ellington, Moran, Como, Noble and others. Box 919. A  
ICE CREAM CABINET, 6 hole, used as deep freeze. \$65. OS 5-8735. A  
WASHER, Bendix, 1952 automatic, \$30. FA 8-5958. A  
KAISER, 1951 2-door sedan, new battery, overhauled, \$150. FR 2-9983. A  
FORD, 1952 2-door, Ford-O-Matic, \$375 DA 6-7851. A  
CERAMIC KILN, molds, greenware, alaze. \$95. OS 5-6587. A  
CAMERA, Canon SV F1:8 Serenar lens, telephoto, wide angle, Bll flash, holder, Norwood director exposure meter, view finders, \$170. RE 1-2964. A  
DRAFTING CHAIR, Cramer, Box 920. A  
STUDIO COUCH, converts to double bed, \$30. FA 8-3425. A  
WASHER, Monitor, 3-sheet capacity, wringer, pump, \$35. DA 9-8986. A  
OLDSMOBILE, 1950 4-door sedan, Hydra-Matic, \$250. PL 6-8600. A  
SHOTGUN, 20 gauge, Winchester, pump, model 12, \$60. OR 4-7379. A  
FURNITURE, dinette set, blonde bedroom set, bedframe, mirror, inner springs & mattress. LO 4-4197. A  
LIVING ROOM SUITE, green frieze couch, matching chairs, solid modern chair needs upholstery, \$25. Box 921. A  
WELDER, oxyacetylene, portable, tanks, gauges, tips, cart. FR 9-4653. A  
FURNITURE, dinette set, innerspring mattress, box spring & frame, 5 drawer chest. RE 3-6312. A  
DINING ROOM SET, Duncan-Phyfe, mahogany, 6 chairs, china cabinet, 2 leaves, pad. \$250. PL 7-1605. A  
MOTOR SCOOTER, Cushman, \$100. OS 5-6792. A  
RECORD PLAYER, RCA, \$25. AX 3-0578.

## FOR SALE

THUNDERBIRD, 1955, hardtop, automatic transmission, windows, seats, tonneau cover, 1958 plates. DA 4-1930. A  
NASH, 1951 Super Statesman, 2-door, overdrive, weather-eye, \$135. FR 5-4642. A  
UNIFORMS, Hawthorne Christian School, shirts size 6, blouses size 7, skirts size 6. OS 6-9637. A  
IRONER, Whirlpool deluxe, hardly used. OS 5-3235. A  
OLDSMOBILE, 1949 88 4-door Super, \$75. FR 4-7697. A  
LOTS, 3, Hesperia, water, streets, electricity in, sell for equity. FR 8-2703. A  
DOGS, hunting hounds, English Blue Tick and Walker hound pups, 9 weeks old, \$10. OS 5-1651. A  
MATTRESS, w/springs, frame, double bed size, \$50. DA 3-4887. A  
PLYMOUTH, 1953 Cranbrook, \$400. TO 6-5438. A  
APPLIANCES, Coldspot refrigerator, 11 cu. ft., freezer top, \$100. Wedgewood Monterey gas range, 35", \$175. OS 5-7050. A  
STUDEBAKER, 1947 Champion, \$100. DA 9-3256. A  
TRIUMPH, 1954, tonneau cover, new battery, \$1695. AX 4-7356. A  
RADIO - PHONOGRAPH, Westinghouse console, mahogany. OS 5-2594, days. A  
MOTORCYCLE, 1953 Harley-Davidson, \$600. OR 2-3512. A  
BED, maple, twin, New Englander mattress, box spring. \$25. DA 9-5072. A  
BOAT, 14' fiberglass, outboard, Mercury Mark 20 engine. DA 4-8432. A  
LAWN MOWER, Craftsman rotary, 19" blade, side ejector, 2 1/2 h.p. motor, OR 4-5650. A  
PLYMOUTH, 1954 Belvedere 4-door, overdrive. AX 1-0955. A  
SAW, De Walt radial, less than 2 years old, \$185. PL 4-8092. A  
STUDEBAKER, 1951 Champion convertible, automatic shift. OS 6-1328. A  
PUPPY, Poodle, female, miniature black, AKC registered. OR 1-2470. A  
AUSTIN-HEALEY, 1956, 100 \$2300. OR 1-4733. A  
CHEVROLET, 1950 sedan, \$250. OR 1-4304. A  
DE SOTO, 1937 coupe, overdrive, \$75. TE 5-8169. A  
DESK, mahogany, office, 34"x60", 7 drawers, swivel chair & side chair, \$50. OS 6-2880, days. A  
ENLARGER, 4x5 Continental, printer, 6 trays, easel, extras, \$40. FA 8-2360. A  
FORD, 1939 coupe, 1948 Mercury engine, needs low gear, \$100. PL 5-2276. A  
TYPEWRITER Underwood, \$45. EX 8-0500, 10 a.m. - 3:45 p.m. A  
DINING TABLE, drop leaf, blonde, seats 8, \$20. DA 4-2956. A  
MOTORCYCLE, 1955 AJS 30.50, swingarm engine, transmission, just overhauled, \$350. FR 6-2578. A  
HOUSE, 3-bedroom, Torrance, 2 car garage, fenced, GI resale, \$15,860 plus costs & impounds, \$1000 down. Box 914. A  
MERCURY, 1949 club coupe, overdrive, original owner, \$325. FR 5-8838. A  
FORD, 1954 Victoria, \$1350. OR 7-1540. A  
SEWING MACHINE, White rotary electric, walnut cabinet, \$55. HO 3-1997, 1 p.m. to 4:30 p.m. A  
VOLKSWAGEN, 1955, can be financed, no trades, \$1250. NE 5-7439. A  
HOUSE, 2-bedroom, large lot, thermo heat, weather stripped, hardwood floors, patio, landscaped, FHA built, Gardena, \$11,000, \$2500 down, occupy close of escrow. DA 3-0097. A  
FURNITURE, dinette set, innerspring mattress, box spring and frame, 5 drawer chest. RE 3-6312. A  
HOUSE, 2 bedroom, 2 1/2 car garage, w/w carpet, fenced back yard, 20'x40' rumpus room with bar-b-q and bar, \$14,850, terms. OS 5-4096. A  
BICYCLE, girls, Goodrich, sidewalk type, \$18. FR 5-4763. A  
DINETTE SET, blonde, leather covered chairs. \$35. OR 1-6875. A  
REFRIGERATOR, GE, Box 913. A  
STOVE, Western Holly, 30". \$30. DA 3-4628. A  
TRAILER, 4'x8'x24" plywood sides, 8,00x15 tires, custom made, \$125. DA 4-4599. A  
PROJECTOR, 16 m.m., Bell & Howell, case, \$65. OX 8-257. A  
IRONER, Easy. FR 5-9648. A  
REVOLVER, Smith & Wesson, K-38, holster, shells, empty brass, \$70. FR 9-7776. A  
MGA, 1957, wire wheels, adjustable steering, tonneau cover, grille guard, wind wings, extras, \$2195. AX 4-7356. A  
TRAILER, two wheel luggage, heavy duty. DA 3-3251. A  
PIANO, Wuritzer Strad, 52" high. AX 3-0746. A

## FOR SALE

WASHER, 1957 Speed Queen, A-18, custom deluxe, less than 1 year old, \$150. GE 1-4233. A  
GRAPE STAKE, redwood, 6'x75', \$40. FA 1-0012. A  
SKI EQUIPMENT, 1 ski w/steel rail, \$14. 1 ski boot, size 8, \$7, poles \$2. OS 6-3222, 10 a.m.-4 p.m. A  
VOLVO, 1956, must sell. VE 8-6114. A  
REFRIGERATOR, Westinghouse, 8 cu. ft., 8 years old. \$65. DA 4-2472. A  
OLDSMOBILE, 1956 98 Holiday deluxe, power brakes, steering, windows, seat, \$2195. DA 3-4641. A  
DUAL MANIFOLD, for 1937-1955 Chevrolet 6, Weiland-Rochester carb., air cleaners, linkage, \$40. OR 2-3082. A  
BREAKFAST SET, yellow, booth and 4'x4' table, seat needs recovering, \$20. FR 9-1592. A  
STUDEBAKER, 1949 Champion Starlite coupe, overdrive, new battery, plugs & brakes, \$175. NE 1-7209. A  
SKIS & POLES, never used, Sigmond Ruud, 6' super hickory, plastic bottom, steel edges, A. & T. safety bindings, \$60. AX 4-4613. A  
TAPE RECORDER, A57 Ampex 601, amplifier, used little, \$450. PL 2-7953. A  
FORD, 1941. \$20. FR 2-1762. A  
BOAT, 12', Glen L. design, interior & deck zolitoned, glass finish, trailer, all controls, Mercury Mark 20 motor. OR 7-3275. A  
TELEVISION, used, \$30. OR 2-5804. A  
LIVING ROOM SET, 3-piece, wine velvet mohair sofa, chair, green wing chair, blue jacquard platform rocker, \$100. OR 1-2254. A  
RIFLE, Winchester, model 88, .243 caliber, Bear Cub 2 1/2 power-scope, Redfield mount, recoil pad, sling, \$165. OR 4-6845. A  
LIVING ROOM SET, 5 pieces, maple, 2 end tables, coffee table, hardly used, no scratches, will sell individually, green and white upholstery, \$200. JA 7-8745. A  
SUPERCHARGER, McCulloch, complete installation setup for V-8 Chevrolet, \$160. WE 4-5479. A  
HI-FI EQUIPMENT, Newcomb 10 watt amp., University tri-axial speaker, bass reflex cabinet, Garrard model T turntable, diamond stylus, \$150 complete, or will sell individually, DA 6-7068. A  
PARROT, young Half-Moon. EX 4-1982. A  
REFRIGERATOR, Gibson electric, 11.2 cu. ft., \$75. AX 1-3778. A  
ACCORDION, Enrico-Roselli, custom model 31 petite, 120 bass, three treble shifts, one bass shift, case, \$200. OR 7-0510. A  
CYLINDER GAGE, Starrett, never used, capacity 2 1/2 to 6 in., \$10. OR 4-1958. A  
CHRYSLER, 1939, 4-door sedan, 1947 6 cylinder engine, hard chrome plated cylinder walls. OR 1-6460. A  
REFRIGERATOR, 11 cu. ft. freezer, guarantee 4 more years, \$160. Box 924. A  
PONTIAC, 1952 Catalina, \$250. OS 5-4201. A  
CESSNA, 170A, clean, high time engine, wheel pants, large tail wheel, VHF & LF radio, loop antenna, new tires, \$3950. FR 8-2145. A  
TOOLS, bandsaw, jointer, shaper, all w/motors, stands. TO 9-8937. A  
ENLARGER, 4x5, complete dark room equipment, \$40. FA 8-2360. A  
ANTIQUE DISHES, varied assortment. GR 7-1539. A  
GAS RANGE, high broiler & oven, automatic timer, light, \$45. OX 8-2057. A  
COFFEE TABLE, Blonde, \$15. OS 6-1555. A  
DAVENPORT, 89" pillow arm, cocoadamask, \$20. PL 1-2784. A  
SECTIONAL, 2-piece, red & gray floral, \$10. OS 5-4736. A  
BUICK, 1950 2-door sedan, \$200. DA 3-1946. A  
RUG, heavy Chinese hand-hooked, light background, floral pattern, 12'x18' w/pad. FR 7-2294. A  
SPEED BOAT, 18' custom utility, '55 Buick Century engine, V-drive, upholstered, fiberglassed, steel trailer, \$2400. FR 4-9171. A  
RIFLE, Remington .22 caliber repeating rifle, \$25. OS 6-9352. A  
MOVIE PROJECTOR, 8mm. Keystone 100, \$45. EX 7-1663. A  
REFRIGERATOR, apartment-sized Servel. RE 2-7905. A  
HI-FI, Phonola, portable phonograph, \$40. FR 6-9891, before 3 p.m. A  
FORD, 1953 convertible, standard shift, overdrive, \$600. GE 3-2961. A  
DIVING EQUIPMENT, Desco mask, Miller-Dunn 2 piston hand pump, expansion-bag, weight belt and fittings. \$45. EX 8-5201. A  
MERCURY, 1950 4-door, \$250. Box 101. A  
TOOLS, Atlas metal lathe, 30" center comp., Universal chucks, holders, parting, follow rest, steady rest, millina, knurling, threading, tail stock chucks, spindle chuck, others. FR 4-9631. A  
**WANTED TO BUY**  
ICE SKATES, men's, size 10 1/2, hockey type. FR 5-4763. B  
CAMERA, Brownie 8 m.m. projector, 500 watts. DA 3-6658. B  
VOLKSWAGEN BUS, 1951 Pontiac for equity and take over payments. LA 6-4520. B  
BICYCLE, girl's, 24". CL 6-1981. B  
ENGINE, Ford or Mercury, short block or complete engine. DA 3-7459. B  
CHEVROLET, 1951, 2-door, \$250. Box 102. B



DON'T LEAVE  
CLASSIFIED MATERIAL UNATTENDED!

## WANTED TO BUY

FORD, 1952 or 1953 Country Sedan or Squire, standard shift, heater. OR 4-9931. B

TOOL CHEST, 8 drawer, roll away. Box 923. B

## FOR TRADE

DOUBLE BED, coil spring & mattress, for studio couch or high-riser. OL 4-7956. B

DIAMOND RING, man's, will trade for electronic equipment, shop tools, .38 or .45 cal. hand gun, \$90. FR 4-4140. C

CHEVROLET, 1956 station wagon, Powerglide, Powerpak, trade equity for older clean car. SY 3-1771. C

WASHER, GE automatic, trade for window box construction, or similar light carpentry job. FA 1-1326. C

## FREE (to be given away)

DOG, 2 years old, mixed breed, female, spayed, licensed, gentle with children. OS 5-6508. D

## RENTALS OFFERED

APARTMENTS, new, large, one-bedroom, furnished. \$75; and unfurnished, \$65. Torrance. OS 6-9086. E

APARTMENTS, new, 1-bedroom, tile kitchen, bath, TV, phone jacks, disposal, off-street parking, automatic washer, dryer, near bus, shopping center, Lawndale, \$75 mo. OS 6-2938. E

OFFICES, 3, 10'x14', air conditioned. OS 5-1169. E

APARTMENT, near Northrop, 1-bedroom, furnished, disposal, new building. PL 4-2578. E

ROOMS, furnished, \$6-\$8 week. RI 8-4858. E

CABIN, furnished, Crestline, accommodates 14, day or week. OS 6-6074. E

HOUSE, fenced, 3-bedroom, w/w carpet, stove, refrigerator, aarage, lease. Torrance. Box 922. E

ROOM, near Northrop, semi-private entrance, share bath, \$12 week. OS 5-0576. E

APARTMENT, 2-bedroom, large, unfurnished, aarage, disposal, near Northrop, \$95, water paid. OS 5-5242. E

APARTMENT, 2-bedroom, Santa Monica, share with young man, \$70 month. EX 4-1902. E

ROOM, prefer man, furnished, near Northrop. \$7 week. OS 6-0346. E

APARTMENT, 1-bedroom, furnished, Hermosa Beach, ocean view, 1 year lease, \$70 month. TE 2-6746. E

COTTAGE, 1-bedroom, furnished, utilities paid, aarage, \$60 month. PL 7-3821. E

APARTMENT, 1-bedroom, duplex, unfurnished, TV jacks, automatic washer outlets, near Imperial & Western, \$65 month. DA 9-8334. E

ROOM, large, private bath, \$15 for 1, \$10 for 2. DA 4-4750. E

APARTMENT, 1-bedroom, large, furnished, Manhattan Beach, sun deck, aarage. FR 5-4118. E

ROOM, near Northrop. OS 6-8724. E

ROOM, furnished, near Northrop, private bath, entrance, linens, utilities furnished, \$12.50 week. OS 9-1668. E

APARTMENT, furnished, bachelor, fireplace, \$70 month. PL 5-5232. E

## RENTALS WANTED

HOUSE OR APARTMENT, for responsible couple and 3-year-old boy, 2-bedroom, unfurnished, w/stove, refrigerator, Inglewood, Hawthorne, Manhattan Beach area, must have yard or play area, references to \$90. OS 6-7319. F

## CHILD CARE OFFERED

CHILD CARE, licensed, fenced yard, hot breakfast, lunch, near Northrop. OS 5-7088. G

## CHILD CARE WANTED

CHILD CARE, days, boy 5, Van Ness & Imperial. PL 4-1775. H

## Scorpions Serve As Radioplane Drone Launchers

The Northrop Division recently established a flight operation at El Paso, Texas, International Airport to support the target missile programs of Radioplane's facility, already in operation in El Paso, it has been announced. Two Scorpion F-89 aircraft have been assigned to the new Northrop operation which will employ 17 highly-specialized personnel. The F-89s will serve as launching platforms for Radioplane's RP-76 target missiles used under U.S. Army contracts for Nike training units.

Rod Close and Don Papish, veteran Northrop test pilots, have been assigned to pilot Scorpion aircraft for the new program.

Approximately 100 Radioplane personnel are employed in El Paso, where parachute production and repair and modification work on radio-controlled aerial targets and target missiles are underway.





**RIDES WANTED**

7:00 a.m. — 3:45 p.m.

(Zone 1)  
CRENSHAW & 104TH ST., Inglewood.  
MARGARET ANN PARKS (5355-49698,  
Ext. 621). OR 1-6569. 2-1

(Zone 2)  
SO. ALVARADO & 3RD ST., Los Angeles.  
JOHN F. PARKER (5232-54835, Ext.  
2171). 2-2

(Zone 4)  
VERMONT & 109TH ST., Los Angeles.  
GENARO CHAPA (5512-44757, Ext.  
2568). PL 6-4755. 2-4

TWEEDY & ANNETTA AVE., South Gate.  
L. B. CROWSON (5564-20429, Ext. 555).  
LO 7-8374. 2-4

VALLEY BLVD. & STIMSON AVE., La  
Puente. (Car pool considered.) CHARLES  
A. SMITH (5568-54066, Ext. 2745). EA  
2-0343. 2-4

(Zone 5)  
LA PALMA & KNOTT, Buena Park. (Car  
pool desired.) GEORGE M. EDWARDS  
(5449-52770, Ext. 1366). 2-5

VERMONT & 155TH, Gardena. EDNA  
JACKSON (5352-25560, Ext. 1508). DA  
3-4641. 2-5

(Zone 6)  
AVALON & 185TH ST., Gardena. PAUL-  
INE COLE (5504-13820, Ext. 2634). 2-6

(Zone 8)  
WEYMOUTH & 9TH., San Pedro. (Car  
pool desired.) A. DUGDALE (5211-  
31926, Ext. 2018). TE 1-1345. 2-8

GAFFEY & 24TH ST., San Pedro. (Car  
pool considered.) JOSEPH D. AZAR  
(5221-54845, Ext. 2203). TE 2-7971. 2-8

(Zone 10)  
AVIATION & ROBINSON, N. Redondo  
Beach. LILLIAN A. CARY (7745-50168,  
Ext. 1571). FR 2-1637. 2-10

7:30 a.m. — 4:15 p.m.

(Zone 5)  
LA PALMA & EUCLID, Anaheim. RALPH  
W. MCKENZIE, JR. (2550-44350, Ext.  
2614). PR 4-5416. 3-5

(Zone 6)  
CHAPMAN & BROOKHURST, Garden  
Grove. (Car Pool desired.) JACK LAW-  
RENCE (5110-54823, Ext. 2451). LEH 9-  
5082. 3-6

(Zone 7)  
AVALON & CARSON, Torrance. SYLVIA  
HART (1310-41792, Ext. 1801). TE 5-4972.  
3-8

(Zone 8)  
ARTESIA & CRENSHAW, Torrance. PHYLL-  
CIA LOVELAND (5120, Ext. 713). 3-8

CRENSHAW & 174TH, Torrance. SANDEE  
GAW (1400-52272, Ext. 2641). DA  
4-8789. 3-8

(Zone 13)  
SEPULVEDA & 77TH ST., Los Angeles.  
FLOYD C. BAIN (7620-19991, Ext. 2515).  
OR 4-6816. 3-13

8:00 a.m. — 4:45 p.m.

(Zone 1)  
NORMANDIE & 42ND ST., Los Angeles.  
TERESA M. VALLIN (3352-13312, Ext.  
1768). AX 1-8219. 5-1

(Zone 4)  
IMPERIAL & NORMANDIE, Los Angeles.  
(Prefer car pool.) LEON WILLOUGHBY  
(3313-52172, Ext. 2500). PL 5-7262. 5-1

(Zone 5)  
ROSSMOOR & BALANTINE, Los Alami-  
tos. (Car pool desired.) GORDON D.  
MADISON (3316-12917, Ext. 2554). GF  
1-4233. 5-5

DEL AMO & ORANGE, Long Beach. (Car  
pool O.K.) W. H. Covert (1500-31601,  
Ext. 2041). GA 3-1363. 5-5

KATELLA & 9TH, Anaheim. (Car pool con-  
sidered.) FRED MAGIDSON (3313-44141,  
Ext. 1257). 5-5

(Zone 10)  
HIGHLAND AVE. & ROSECRANS, Man-  
hattan Beach. DONNA BERG (3123-  
54840, Ext. 2511). FR 6-4254. 5-10

(Zone 13)  
SEPULVEDA & VENTURA, Reseda. (Car  
pool desired.) DICK EALY (3411-29667,  
Ext. 1866). DI 4-8849. 5-13

3:45 p.m. — 12:15 a.m.

(Zone 13)  
WILSHIRE & WESTGATE, West Los An-  
geles. O. V. LUCKNER (5223-15301, Ext.  
563). GR 9-1895. 6-13

**RIDES WANTED**

4:45 p.m. — 1:15 a.m.

(Zone 8)  
WESTERN & SARTORI, Torrance. (Tem-  
porary.) ANITA HERRINGTON (5352-  
46130, Ext. 1565). 8-8

(Zone 14)  
SANTA MONICA & VINE, Hollywood.  
(Desperate, will meet party anywhere in  
Hollywood.) JACK I. LEVITT (5950-  
49905, Ext. 4288). HO 7-3629. 8-14

**RIDES OFFERED**

6:00 a.m. — 3:45 p.m.

(Zone 5)  
BROOKHURST & ORANGETHORPE, Ful-  
lerton. ALLEN SACKETT (6230-52057, Ext.  
3-460). LA 5-5030. 11-5

7:00 a.m. — 3:45 p.m.

(Zone 4)  
VALLEY BLVD. & STIMSON AVE., La  
Puente. (Car pool considered.) CHARLES  
A. SMITH (5568-54066) Ext. 2745). EA  
2-0343. 12-4

(Zone 5)  
LA PALMA & KNOTT, Buena Park. (Car  
pool desired.) GEORGE M. EDWARDS  
(5449-52770, Ext. 1366). 12-5

COMMONWEALTH & NICHOLAS, Full-  
erton (3 riders wanted.) AL GOODMAN  
(5449-17337, Ext. 1366). LA 6-4520. 12-5

ARTESIA & LAKEWOOD, Bellflower.  
(Want 2 riders.) ED SELTH (5355-51141,  
Ext. 1445). ME 0-6566. 12-5

(Zone 8)  
GAFFEY & 24th St., San Pedro. (Car pool  
considered.) JOSEPH D. AZAR (5221-  
54845, Ext. 2203). TE 2-7971. 12-8

WESTERN & PACIFIC COAST HWY.,  
Harbor City. (Pick up on Western, Cren-  
shaw or both.) JOSEPH HYDE, JR.  
(5223-15256, Ext. 563). 12-8

WEYMOUTH & 9TH., San Pedro. (Car  
pool desired.) A. DUGDALE (5211-  
31926, Ext. 2018). TE 1-1345. 12-8

7:30 a.m. — 4:15 p.m.

(Zone 3)  
SEPULVEDA & 77TH ST., Los Angeles.  
FLOYD C. BAIN (7620-19991, Ext. 2515).  
OR 4-6816. 13-3

(Zone 5)  
LA PALMA & EUCLID, Anaheim. RALPH  
W. MCKENZIE, JR. (2550-44350, Ext.  
2614). PR 4-5416. 13-5

(Zone 6)  
CHAPMAN & BROOKHURST, Garden  
Grove. (Car Pool desired.) JACK LAW-  
RENCE (5110-54823, Ext. 2451). LEH 9-  
5082. 13-6

8:00 a.m. — 4:45 p.m.

(Zone 1)  
NORMANDIE & 42ND ST., Los Angeles.  
TERESA M. VALLIN (3352-13312, Ext.  
1768). AX 1-8219. 15-1

(Zone 4)  
IMPERIAL & NORMANDIE, Los Angeles.  
(Prefer car pool.) LEON WILLOUGHBY  
(3313-52172, Ext. 2500). PL 5-7262. 15-1

(Zone 5)  
DEL AMO & ORANGE, Long Beach. (Car  
pool O.K.) W. H. Covert (1500-31601,  
Ext. 2041). GA 3-1363. 15-5

KATELLA & 9TH, Anaheim. (Car pool con-  
sidered.) FRED MAGIDSON (3313-44141,  
Ext. 1257). 15-5

ROSSMOOR & BALANTINE, Los Alami-  
tos. (Car pool desired.) GORDON D.  
MADISON (3316-12917, Ext. 2554). GE  
1-4233. 15-5

(Zone 13)  
SEPULVEDA & VENTURA, Reseda. (Car  
pool desired.) DICK EALY (3411-29667,  
Ext. 1866). DI 4-8849. 15-13

3:45 p.m. — 12:15 a.m.

(Zone 3)  
AZUSA & SAN BERNARDINO FREEWAY,  
Azusa. (Pick up on or near Freeway,  
Covina, Baldwin Park, La Puente.) JOHN  
HEMPMYER (5223, 15261, Ext. 563). ED  
4-6598. 16-3

4:45 p.m. — 1:15 a.m.

(Zone 6)  
WILLOW & PALO VERDE, Long Beach.  
(Bellflower to Artesia to Crenshaw.)  
K. N. ANDERSEN (5568-22097, Ext.  
2745). HA 1-3508. 18-6



ED ROFF

## Annual Art Show Opens March 24

Norcrafters artists, amateurs and pros, will be donning smocks and berets as they commence work on paintings for the 11th Annual NRC Purchase Prize Art Exhibit slated for late March.

Formal announcement of the annual art show will appear on all bulletin boards tomorrow, it was revealed by Harry Clark, general supervisor, Personnel Activities.

Details are outlined in the official rules and regulations now available at all PA&S offices.

This year's exhibit offers two categories of entries. Class A for amateurs who have not sold art work, and Class B for professionals and semi-professionals who have sold paintings. This class also includes former NRC art prize winners and personnel who hold classifications of commercial artist, industrial artist and technical illustrators.

All entries will go on exhibit in the Plant III cafeteria beginning March 24. Paintings are due at PA&S by March 20. The display will move to the Plant I cafeteria April 7 with judging slated early in the month by impartial professional artists.

A public showing is scheduled at the NRC Clubhouse for later in April, date to be announced.

Prizes in the Class A division will be \$100 and \$75; in the Class B division, \$150 and \$100.

Show will again feature popular junior division for Norcrafters sons and daughters, age limit 14. Trophies and ribbons will be awarded to winners.

## Gem Experts To Give Talks

Commercial gem experts will present special lectures to members of the NRC Gem and Mineral Club, it was announced by commissioner Ray Cole. The colorful lectures are designed as an introduction to the second seminar on basic geology and mineralogy, slated to start Thursday, February 27.

Diamond specialist Gladys B. Hannaford of the N. W. Ayers Company, New York, will give a slide illustrated talk on diamonds at tomorrow night's meeting, 7:30 p.m., NRC Clubhouse. She will have a display of genuine diamonds and exact replicas of such famous diamonds as the Hope, Jonkers, Star of India, and others.

Next lecture will be on Thursday, February 20. Mrs. Fran Virgin of Fran's Gem Shop will give a demonstration on the lapidary art. Using her own tools, she will show how to make Cabo-

## Ed Roff Savings Idea Nets Cash Award, Bates Congrats

It was a welcome reward—a check for \$624.00. Norcrafters Ed Roff, Spares Requirements coordinator, was on the receiving end. First Northrop \$1000 suggestion award winner Mel Bates was on the giving end.

Roff suggested the use of smaller, low cost reproduction masters for preparing the ground support equipment and provisioning parts breakdown required by the Air Force.

Previously, larger masters costing over twenty-seven cents each were used, at the rate of approximately 50,000 a year. Expense of this operation prompted Roff to

suggest the smaller masters which are available at less than nine cents each. The Air Force okayed the proposal to use the smaller masters.

"A relatively simple thing," remarked Cecil Callaway, Suggestion Award supervisor. "But, it just serves to point up how seemingly little operations may be improved upon to effect large savings."

"Important thing, though, isn't how simple or involved an idea is," he added. "Instead, it's the savings that can be realized. Roff's suggestion is a good example of this."

## NEWS BRIEFS

(Continued from Page 1)

that is, Northrop and the customer have the same weapons system concepts, but sometimes we take a different direction. This is usually the result of a scientific breakthrough, which is recognized by Weapons Systems Analysis as being applicable to an unsolved problem. The T-38's light-weight engine is an example of this type breakthrough. This provides the customer with a low-cost solution to the supersonic training program. We want the customer to have the benefit of our very best resources. These resources are talent, experience, and knowledge."

**GOOD PERFORMANCE AT PALMDALE**—Vice President, Manufacturing, R. R. Nolan, states that phase-out costs at Palmdale on the F-89 program were well handled by base management. Base Administrator Tom McCracken and his staff have been complimented for a job well-done.

**N-156F**—Preliminary Design reports that wind tunnel development work is underway on leading edge slats and boundary layer trailing edge flaps of the airplane. N-156F is tailored to short fields of the NATO countries. Zero launching from mobile zero-length launchers is a design capability of N-156F. Fact not to be overlooked —N-156F's production costs are half that of heavy jet aircraft. Fuel consumption is less than half that of comparable airplanes.

**AT AMARILLO**—Northrop instructors were assigned to Snark Training School, Amarillo Air Force Base, 10 February. Program there will be: (1) To give the Air Force teaching staff training in presentation of Snark courses. (2) To aid the Air Force teaching staff with the first contingent of Snark students. (3) Continued assistance to the Air Force teaching staff with second contingent of Snark students, and to phase-out at this time when the Air Force teaching program is on firm presentation and technological ground. Duration of Amarillo assignment will be about 18 months. Ralph Quinn ex-F-89 tech rep, will be supervisor of the Northrop group.

**LATEST FOR T-38**—Frank D. Mathes, manager, Field Service, is to depart for ATC's Randolph Field, San Antonio, Texas, to study latest Air Force trainer maintenance methods. His findings will apply to how we handle the field service representation on the T-38.

**T-38 PROGRESS** — Bright spot last week was T-38 sled test unit on its way to Edwards. First of the programmed test runs is targeted for next Tuesday, February 18. Testing will continue through first of June, according to Stan Erbeck, T-38 project manager. Purpose is to check-out crew escape system under super-sonic flight conditions. Thermo test structure is completed, is now being equipped and instrumented for cockpit conditioning and pressurization tests in Northrop's environmental lab—due to start in near future. Also coming along on schedule is first T-38 complete prototype.

## IAS Plans Sweetheart Dance

Preparations are underway for a February 22 Sweetheart Dance at the Ambassador Hotel's Sunset Room, sponsored by the Institute of Aeronautical Science, Los Angeles Chapter.

Music for the occasion will be supplied by Carroll Wax's orchestra with entertainment by vocalist Juanita Crowley and magician Bill Chaudet.

Tickets are available to Northrop members from the slabbing of the stone through polishing and setting of the stone.

Cole stated that there is no charge for the lecture demonstrations. All club members, friends and guests are invited.

crafters IAS members from Bill Dedon, Preliminary Design Structures representative, Ext. 1441, 1428.

## MIXED CHORUS VALENTINE PARTY

An old fashioned Valentines Day Party will be held by members of the NRC Mixed Chorus. Bill Porter, commissioner reported, Colorful event will take place Saturday, February 15.

Scene will be the home of Joyce Smith in the Palos Verdes Riviera district. A cordial invitation is extended to all members of the chorus, past and present, and their friends. Contact Bill Porter for further details.

## Open Basketball Tourney on Tap

An open elimination consolation tournament for day and night shift basketball enthusiasts is scheduled for February 22 and March 1. Entries are being accepted now at Personnel Activities, Plant One, extension 2784.

Providing an opportunity for the three NRC Basketball leagues to meet on one court, the tourney features individual trophies to

members of winning and consolation teams.

## CHESS WINNERS

Outcome of a four-month chess tourney held by the Contract Division saw Bill Henderson in first place with Art Morgan, second, and Ben Quan, third.

Thirteen "chess masters" took part, each playing 24 games.



## Singing Secretary

**SINGING** secretary — Northrop's Diana Higley was heard last week at Hollywood's "Little Theater" singing role of Wellgunde in the Wagnerian opera "Das Rheingold", presented by the Los Angeles Conservatory. Secretary to Boeing representatives, she hopes to obtain music degree from University of Southern California, studied at Cincinnati Conservatory, does hospital, USO work.

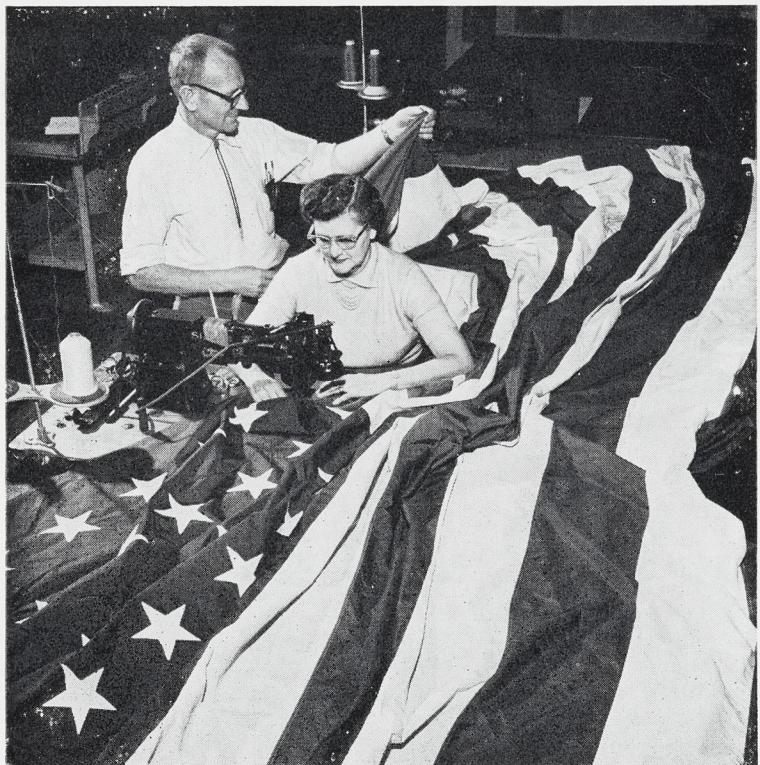


## Northrop News Pictorial



## Air Force Promotion

**SILVER BARS**—Captain Eugene V. Venezia, missile project officer receives congratulations and a pair of outsized shoulder bars from Lieutenant Colonel D. A. Simcoe, Air Force plant representative, right and Major Walter F. Stebens, deputy Air Force plant representative. Ceremony followed the captain's promotion from first lieutenant.



**WITH LOVING HANDS**—As would Betsy Ross, Jewel Swain, seamstress in upholstery shop repairs American flag. Upholstery shop leadman Francis E. Glasser inspects flag. Old Glory proudly flies each day from Plant One, Engineering Center, Administration Building, and Plant Three. Photo was suggested by Cornelius Frields.

## Take a Second Look



**VALUE ANALYSIS**—Cost-conscious Northrop Engineering and Materiel personnel last week heard General Electric's nationally recognized Larry Miles discuss the "value analysis" approach to cost improvement of products. Miles likened value analysis to performance analysis, defined value as "lowest cost of reliably accomplishing the job." He said that a quick second look, before a part becomes standard, may reveal a less expensive way of making the part, save up to 50 per cent or more of cost. With Miles, above, Jack Hinchliffe, director of Materiel; John Van Hammersveld, general supervisor, Producibility Engineering; Chuck Keach, chief purchasing agent.

## Management Award

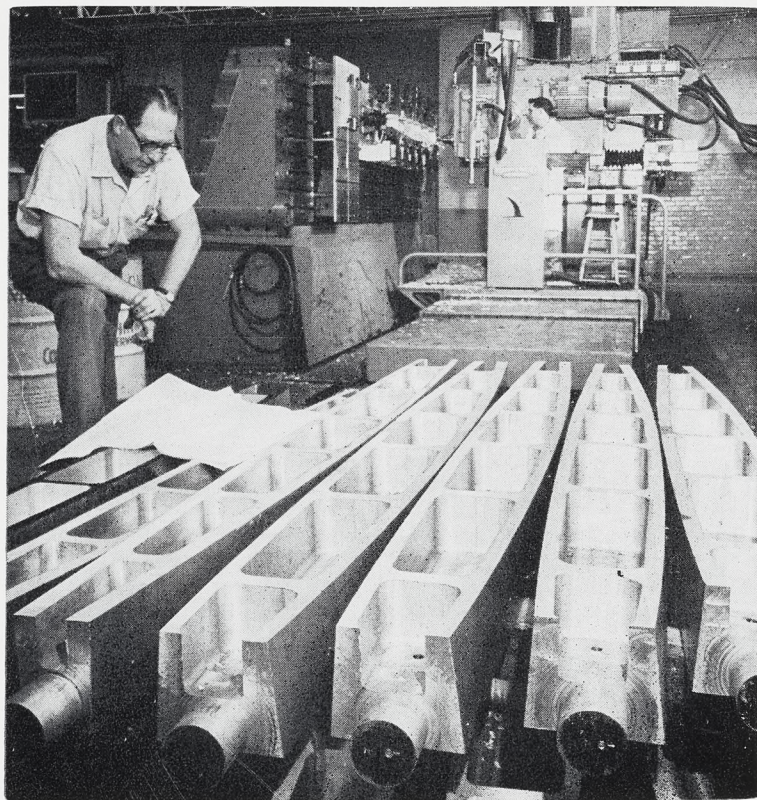
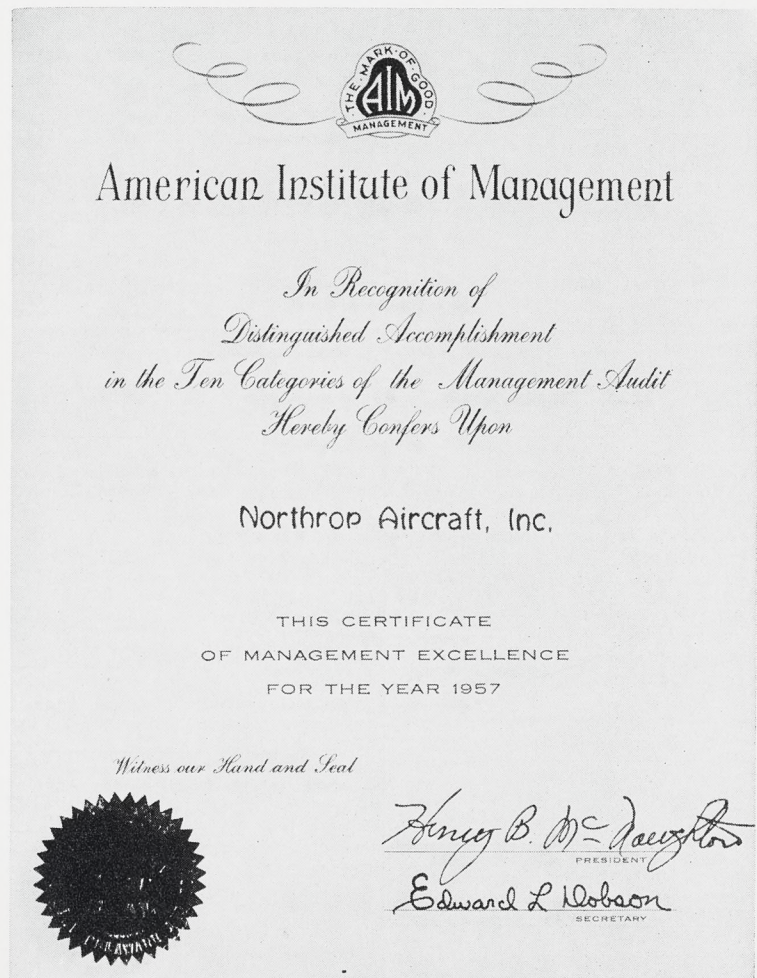
**EXCELLENCE**—The American Institute of Management has placed Northrop on the 1958 list of Excellent Managements numbering 495 American and Canadian companies. Letter to President Whitley C. Collins stated that an audit committee examination of Northrop's management operations and accomplishments for 1957 revealed sound management standards in all categories examined.

(See story, Page 1)



**HONORED**—Los Angeles Council of the Boy Scouts of America confers its highest honor on Sid Cohan, supervisor, Propulsion, Northrop Division. Veteran of 30 years of Boy Scouting, Cohan received the Silver Beaver award for distinguished service to boyhood.

**FOR SNARK**—Wing root attach ribs machined on new numerically-controlled profiler, background, Mack Duncan, operator. Jerry Long, foreman, checks ribs.







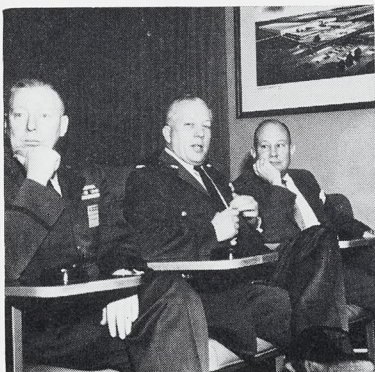
**AF INFORMATION OFFICERS**—sign in for Northrop visit. From left, Moncel A. Monts, Pentagon; Col. Broun Mayall, ADC; Francis W. Jennings, Pentagon; Col. Max Boyd, AF Academy; Maj. K. D. McFarland, New York; Maj. Lee Gulley, Chicago; Lt. Col. Don Foster, SAC; and Col. J. A. Stuart, TAC. Group totaled 31 AF Information Officers.



**T-38 BRIEFING**—Col. Frank Pope, Pentagon, gets cockpit view of Northrop's new supersonic trainer as Stan Erbeck, manager, T-38 Project Office, explains details.



**ABOVE**, Col. Eugene B. Le-bailly, TAC; Col. Mayall, ADC (back to camera); Col. Reginald Cram, Orientation Group; Lt. Col. Foster, SAC.



**NORAD ISO**—Col. Barney Oldfield, chief information officer, Northern Air Defense; John R. Alison, vice-president, Customer Relations.



**VIEW PROJECTS**—Maj. McFarland, New York; Capt. Carlo F. Presti, Legislative and Liaison Branch; Dave Karten, Airman Magazine.

## NORTHROP

# NEWS BRIEFS

**AIR FORCE INFORMATION**—Air Force information officers from all major commands visited Northrop 10 February for the purpose of planning information programs on the Snark and other Northrop projects. The meetings were jointly coordinated by Northrop Division Public Relations and Military Relations. Northrop officials headed by General Manager Miller and A. V. Cline, director of Corporate Public Relations, greeted the group and presided over briefings of significant factors.

**FOURTH FLIGHT TO ASCENSION**—Milt Kuska, chief Flight Test engineer, reports that the Snark was launched from Cape Canaveral 14 February for the fourth successful flight to Ascension. These Cape Canaveral—Ascension Island flights are a part of a continuing program to demonstrate all aspects of the operational weapon.

**THE GREY SNARK**—The first production Snark missile was accepted by the Air Force last week. The big bird, however, will remain at Northrop Field for additional R&D to fit it into the APAC program. At the conclusion of this program the grey Snark will go to Florida for tests. It will not see tactical service as a weapon.

**SNARK BOARD**—Last week Northrop's top management was host at a phase and progress meeting of the ARDC's Development Engineering Inspection Board, on Snark ground support and equipment. Northrop Division top officer and General Manager Robert R. Miller gave the welcoming address. All other vice-presidents from Sales, Engineering, Contracts and Manufacturing were in attendance. The DEI group was here Wednesday, Thursday, and Friday. An additional phase meeting will be held in the near future. A complete evaluation by the DEI Board is scheduled for May.

**TRANSPORT**—"Consolidation of transport, company wide, under one office—Traffic Administration, has reached the last step of implementation," stated Vice-president and General Manager Robert R. Miller last week. "Purpose of this consolidation is to bring under one direction all division transport equipment, facilities, and personnel, in order to eliminate duplication of effort and clarify responsibility areas. The plan will reduce our operating costs \$124,450.00 a year. The transportation bill at Northrop is \$1,501,000.00 per year. The new plan represents an eight per cent savings . . ."

**MORE BOEING BUSINESS**—Al Morgan, vice-president, Contracts, reports that Boeing subcontracts have been increased a total of 44 units in the various orders. This is on the 707 outer wing and aft section.

**COMPETITION AND COSTS**—Dan Hill, Northrop treasurer, reports that cost reduction programs are being re-examined and new goals will be set for the remainder of the current fiscal year. "The requirement," he stated, "to distinguish between Nortronics' cost and those of the Northrop Division has posed new budget considerations for the next fiscal year. The separation of Nortronics direct labor load from Northrop reduces the base on which we can compute our indirect budgets. All divisions should prepare now to be ready to meet the changing picture. If we wait until August —."

**NORTRONICS**—Transfer of personnel to Nortronics organization has been completed, according to Dr. William F. Ballhaus, vice-president and general manager, with some 4600 personnel displaying the new Nortronics badge. The Electronic Systems and Equipment Division, occupying the

(See NEWS BRIEFS, Page 2)

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, February 26, 1958

## Credit Union Shareholders Vote Increased Loan Limits

Provisions for increased loan and thrift service to Norcrafters were approved by shareholders of the Northrop Credit Union at their recent annual meeting.

Credit Union shareholders also elected seven directors for the year and received notice that a three and one-half per cent dividend was declared for the calendar year 1957 and will be entered on members' ledgers in March.

Length of service required to obtain unsecured loans was reduced and the maximum unsecured loan obtainable was raised from \$300 to \$400. For specific details on loans, inter-

ested Norcrafters should check with Credit Union officers.

Length of service required to secure auto financing through the Credit Union was lowered from two years to one year. Limit of savings a member may have on deposit was upped to \$3000. Above changes were made to keep Credit Union services current with others throughout the industry, Walt Gage, manager, stated.

Directors elected at the annual meeting include: H. R. Watson, president; J. L. Dew, vice-president; Walter T. Gage, secretary-treasurer; A. R. Spring; J. R. Wilson; F. M. Ziegler; and K. I. Thurston.

Credit Union supervisory committee members are: J. B. Campbell, chairman; G. C. Chalmers; and W. W. Harter. Credit committee includes S. C. McKenzie, chairman; L. M. Rondot; and V. G. Vanderville.

A survey of Credit Union operations, stated manager Gage, reveals that as of January 31, this year, unsecured loans were at 1542. He said this is the most used service by Norcrafters. Auto loans totaled 507 as of the same date.

Savings on deposit as of January reached \$1,063,620.09. Norcrafters save for many things, Gage pointed out. "Some save for bills which come due on a yearly basis such as taxes, auto insurance and registration, household insurance." Others, he said, save for vacations, outfitting children for school, graduation, and a host of other reasons.

Busiest time of the year for the Credit Union, he stated, is the eight-week period encompass-

(See CU MEET, Page 2)

## Achievement Youngsters Visit Plant

Two Northrop-sponsored Junior Achievement groups were guests of General Manager Robert R. Miller on a recent plant tour and dinner at the executive dining room, it has been announced. Occasion for the visit was National Junior Achievement Week.

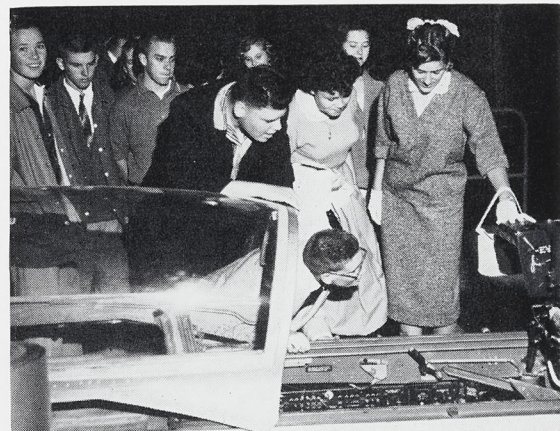
Hosts were John B. Clark, director, Industrial Relations, and Jack Mannion, assistant to the general manager and Division representative for Junior Achievement.

At the dinner, it was announced that the Northrop-sponsored remodeling of the Junior

(See YOUNGSTERS, Page 2)



**JUNIOR ACHIEVEMENT**—Members of Let-R-Rak Company, one of the Northrop sponsored groups, busy at work in newly renovated facility. From left, Janet Farrand, Lynda Fisk, president; Sammie Chapman, Gary Story, Jon Shepherd, production manager; Judy Barnfather, Alan Kumlin, Neil Peterson, Al Whaley, production advisor; guest; Harlan Oliver, business advisor; and Gene Levene. Northrop remodelled facility used by the two company sponsored Junior Achievement groups.



**NORTHROP TOUR**—As a salute to Junior Achievement, Northrop hosts members of Let-R-Rak and RACO Manufacturing Company, Northrop sponsored groups. Viewing Scorpion which fired air-to-air atomic rocket, Larry Brumley, Alan Krumlin, Joyce Wright, Steve Thompson, Richard Nickloff, Sharon Vining, Garland Holt, jr., Janet Breneman, Emma Lee Yancey, and Jerry Crist. Following tour, youths dined at executive dining room, were guests of Robert R. Miller, general manager, Northrop.

## Yukon Open To Traffic Twice Daily

As a step in improving the traffic flow at the beginning and close of shifts, the Yukon crossing at the intersection of Yukon and Broadway is now opened for two periods during the day.

John Strater, chairman of the Management Advisory Committee on Parking, stated that the crossing is open at the following times: 6:30 to 8 a.m. and 3:45 to 5:15 p.m. It is closed at all other times.

He pointed out that use of the Yukon crossing by south-bound traffic at the close of shift speeds the flow of vehicles and reduces the congestion on Broadway at the Crenshaw and Prairie intersections. Yukon is open through to Rosecrans.





**COST CONTROL PROGRAM PROGRESS**—Key men involved in monitoring implementation of the new cost control system meet for progress report. Meeting draws Bob Lloyd, manager, Manufacturing Engineering; B. R. Bonnett, director, Administrative Services; Richard R. Nolan, vice-president, Manufacturing; Chuck McLucas, manager, Cost Control Engineering; Bill Hall, executive assistant, Manufacturing Engineering; Arch Wallen, factory manager; Jack Mannion, assistant to the general manager; and Frank Barnard, controller, Northrop Division. New system pinpoints all operating costs.

## Improved Cost Control System Pinpoints Cost Performance in All Contract Areas

Key effort at Northrop in the cost control and reduction program is at present underway in Administrative Services Department.

The concept of the program was first formulated when General Manager Robert R. Miller, in October of 1956, requested that the existing procedure of cost reporting be refined and an essentially new method be implemented in order to meet and beat the upward spiral of operating expenses.

The assignment, under the heading of Cost Control Engineering, was placed with Administrative Services Department, B. R. Bonnett, director.

Administrative Services, aside from Cost Control Engineering, is responsible for Organization Analysis, headed by John Sterling; Systems Engineering, Keith Robinett; and Records Management, Leo Richman.

Cost Control Engineering is headed by Chuck McLucas.

First goal set during formation of the program was integration of data and reports for cost control and, as a result, the Gen-

eral Manager requested that a formal proposal be developed under the direction of the Controller and Cost Control Engineering. Objectives of the improved program were as follows.

1) To provide useful cost information on completed contracts for negotiation of follow-on contracts.

2) To provide cost data which would aid in estimating on new projects.

3) To provide the means to forecast and control cost on going contracts.

4) To provide centralized responsibility for all cost performance reporting as a function of the Northrop Finance Division.

Following a review of the proposal by division vice-presidents and their staffs, the integrated cost control program was given the go-ahead.

Chuck McLucas divided the Cost Control Engineering section into two groups: one headed by Ralph Sater, responsible for the report development; and one with Dennis Lee in charge, responsible for detailing timely, economical data processing procedures.

Streamlined steps, covering all phases of a contract from formation to completion, were designed for better financial and operational control.

One of the improvements of the program is a new impartial reporting system for costs on going contracts. Originating at the department level, this reporting reflects variations from planned performance for timely department level corrective action.

Implementation of the new cost control program was on a priority basis. First concern was directed toward manufacturing operations under Vice-president Richard R. Nolan, since at that time the largest dollar budget was in this area. Mr. Nolan in turn, established fabrication as the first priority, followed by assembly, tooling, off-site manufacturing, and materiel.

A "family of reports" was devised to provide weekly performance data in each area of operation. This allows manufacturing to pinpoint cost, compare cost with budget.

The same reporting procedure is programmed for engineering departments. It is pointed out that this system makes it possible for every bit of effort to be accurately accounted for and provides a basis for comparing bid, budget and actual cost.

## Youngsters

(Continued from Page 1) Achievement facility in Hawthorne had been completed. Among the groups using the facility are the two sponsored by Northrop—Let-R-Rak Company and RACO Manufacturing Co.

Let-R-Rak produces wooden wall-type letter holders and RACO manufactures phonograph record holders. These operations give the local high school students opportunities to learn and experience how a business is conducted. The youngsters form a company, select a product, procure raw materials, solicit stockholders, market their product, pay wages and distribute profits.

The groups receive guidance from volunteer business advisors. Norcrafters assisting the two companies include Al Whaley, Harlan Oliver, Leo Sacks, Jack Bangs, Tom Brazil, Jabe Fellhauer, and Duncan Thomas.

## Tom McCracken Appointed to T-38 Long-range Planning

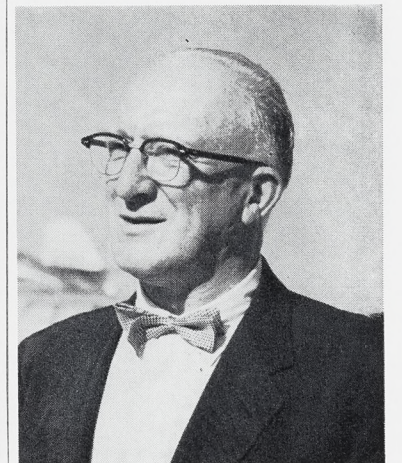
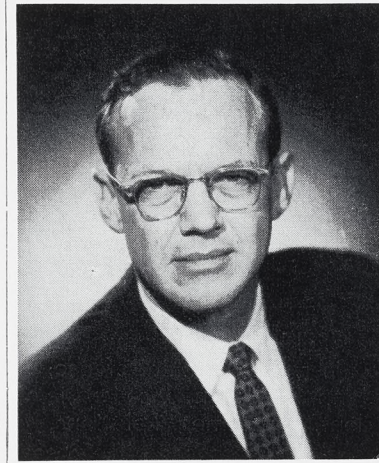
### WILLARD GRAHAM MADE NORTHROP PATENT HEAD

Willard M. Graham has been appointed director of the Northrop Patent Office, it was announced recently by George Gore, general counsel.

Mr. Graham has been a member of the Patent Office staff for the past eight years and served

Appointment of Tom McCracken to head coordination of all Manufacturing-Materiel Division activities on long-range planning for the production of T-38 aircraft has been announced by Richard R. Nolan, vice-president, Manufacturing.

Mr. McCracken will divide his time between this new assignment and his duties as Palmdale Base Administrator until phase-out of the F-89J program is completed. He has served as



as assistant to Mr. Herbert E. Metcalf, former Northrop patent counsel, who passed away late in November of last year. Mr. Metcalf had served as the company's patent officer since World War II days.

As director of the Patent Office, Mr. Graham heads a group of patent experts serving all divisions of the corporation. These include Radioplane, Nortronics and Northrop Division.

## Miller Heads Nortronics Engineering

Ross F. Miller, one of the Northrop engineers who played a key role in the development of the successful Snark guidance system, has been named chief engineer for the Electronic Systems and Equipment Division of Nortronics.

His appointment was announced by Fred Stevens, operations manager, ES&E Division.

As chief engineer, Mr. Miller will direct the efforts of a 700-man technical and scientific staff currently engaged in advanced research and development programs of the ES&E Division. Included are studies on terrestrial and interplanetary missile guidance systems, infrared applications, digital computers, and flight control systems for high performance aircraft.

Mr. Miller is a graduate of the University of Washington and holds a Master of Science degree.

head of the Palmdale operation since its start in early 1954.

Another announcement by Mr. Nolan last week named F. M. Gibian as assistant to the vice-president, Manufacturing. In his new post, Mr. Gibian will assist on all estimating and budgeting matters and in the direction and monitoring of division plans for improved efficiency.

Mr. Gibian has been manager of General Office Administration, Contract Administration, Master Planning, and Cost Estimating at Anaheim for six years.

## CU Meet

(Continued from Page 1)

sing the Christmas holiday. Demand for money this past holiday period was second heaviest in Credit Union history. Applications for loans and withdrawal of deposits totaled \$1,098,233.99. Biggest holiday period on record was in 1954.

Established October 2, 1946, the Northrop Credit Union accepts savings deposits and provides loans for personnel at conservative rates. It is chartered by the State of California and is owned and managed by Northrop personnel.

As a convenience to Norcrafters who take advantage of Credit Union services, savings deposits may be made by automatic payroll deduction. Payment on loans may also be made through payroll deductions.

Since its founding in 1946, the Credit Union has approved more than 63,000 loans accounting for over \$13,000,000. Clearings since 1946 have mounted to a total of 75 million dollars.

## NEWS BRIEFS

(Continued from Page 1)

**Hawthorne Plant Two building and outlying facilities, has 2700 assigned, and the Systems Support Division, occupying the Anaheim facility, has 1900 assigned.**

**CORPORATE RECRUITMENT**—Proposal has been submitted for approval to establish Corporate approach to on-the-road recruitment (including recruitment from colleges) and recruitment advertising, states George Gore, Corporation secretary and Northrop Division general counsel. Proposal is outcome of studies by the Interdivisional Committee on Industrial Relations. At present, recruitment teams in the field interview for all elements of the Corporation, keeping touch with requirements. Corporate approval of the plan will mean that a committee will be established and college level recruitment and recruitment advertising services will be coordinated by the Northrop Division to meet all divisional requests.

**NORTHROP LONG-RANGE PLANNING**—General Manager Robert R. Miller, met with the division planning council on 15 February to chart a 10-year course for Sales, Engineering, and Manufacturing efforts. In outlining the objectives of the move he stated, "It is our objective to identify the product areas in which the Northrop Division has the greatest potential and the greatest chance of success. We will look closely at the technical, sales, and facility requirements in the fields of hypersonic airplanes, ballistic missiles, and space vehicles—particularly those of the skip type. This means that Northrop is looking down the road and into the future. The air and space proposals of today will be the engineering and assembly line work of tomorrow."

**Northrop News**

Vol. 16 Northrop Field, Hawthorne, Calif. No. 11

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## Wind Tunnel Hours For T-38, N156F

**PROVING**—Air Force-Northrop T-38 supersonic trainer and its companion airplane, the Northrop N-156F counterair fighter, are undergoing extensive test programs to prove out latest state-of-art applications and newest technological design features. T-38 and N-156F, developed in parallel, represent new break-through in lightweight, high-performance aircraft featuring lightweight engines, low construction costs and ease of maintenance.



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 3)

SAN BERNARDINO RD. & VALENCIA PL., Covina. C. W. RYAN (7721-11864, Ext. 771). 2-3

(Zone 4)

NORMANDIE ST. & 110th, Los Angeles. RICHARD TALKINGTON (5604-55236), PL 4-7158. 2-4

(Zone 5)

ORANGETHORPE & BROOKHURST, Fullerton. (Car Pool desired—Mariposa). ALLEN R. SACKETT (6230-52057, Ext. 484). LA 5-5030. 2-5

(Zone 6)

LA PALMA & KNOTT AVE., Buena Park. (Car Pool desired—am in Building 21.) ROBERT GELLER (5353-53839, Ext. 2347). LA 2-7676. 2-6

SPRING ST. & STUDEBAKER RD., Long Beach. DEL E. EVANS (5221-54836, Ext. 2203). HA 9-3659. 2-6

(Zone 10)

AVIATION & MANHATTAN BEACH BLVD., No. Redondo Beach. BERTIE VILLANUEVA (6610-47708, Ext. 261). FR 4-3600. 2-10

ROSECRANS & INGLEWOOD AVE., Hawthorne. F. RISCH (6270-25486, Ext. 1683). OS 5-2437. 2-10

HWY. 101 & 3rd St., Manhattan Beach. PAGE JENNINGS (5240-15767, Ext. 2667). FR 4-5644. 2-10

(Zone 11)

PENN ST. OR SHELTON ST. & MAPLE AVE., El Segundo. (Want a ride morning and evening.) PALMER A. SWIGGOM (5406-55237, Ext. 2220). EA 2-2093. 2-11

(Zone 13)

CRENSHAW & 104TH ST., Inglewood. ISABEL DOTY (5355-53694, Ext. 2083). OR 7-4995. 2-13

CRENSHAW & 104TH ST., Inglewood. MARGARET ANN PARKS (5355-39, Ext. 621). OR 1-1632. 2-13

7:30 a.m. — 4:15 p.m.

(Zone 5)

ROSECRANS & ATLANTIC, Compton. D. H. EAGLIN (8930-27326, Ext. 2773). NE 1-7209. 3-5

(Zone 8)

CRENSHAW & 174th St., Torrance. ROSALIE D. RODRIGUEZ (1421-46954, Ext. 691). DA 3-3496. 3-8

(Zone 13)

SANTA MONICA BLVD. & OVERLAND, West Los Angeles. D. J. SNYDER (5141-31433, Ext. 1881). GR 9-0408. 3-13

(Zone 14)

WILSHIRE & FAIRFAX, Los Angeles. (Need ride to and from work.) MAE BUCKLEW (5240-14439, Ext. 2002-1847). WE 8-8853. 3-14

VENTURA BLVD. & TOPANGA CANYON BLVD., Canoga Park. WILLIAM R. FAUGHT (8930-32246, Ext. 2717). DI 0-7216. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 3)

CITRUS & SAN BERNARDINO FREEWAY, Covina. CLINT COMERFORD (3146-54846, Ext. 750). ED 9-7033. 5-3

(Zone 5)

BROOKHURST & LINCOLN, Anaheim. (Need one more driver to fill out car pool.) ANN RYAN (3142-32958, Ext. 2022). JE 7-2555. 5-5

(Zone 6)

VERMONT & 169th St., Gardena. THOMAS E. COLLINS (3360-51325, Ext. 1870). DA 3-3621. 5-6

(Zone 8)

WESTERN & 25th, San Pedro. (Desire to obtain ride or join a car pool. Have parking lot pass.) V. NESPOLO (3546-30677, Ext. 2063). TE 1-2973. 5-8

(Zone 10)

HIGHLAND & 4th or 5th, Manhattan Beach. (Would like to exchange rides.) SYBIL V. APGAR (3120-12586, Ext. 1395). 5-8

3:45 p.m. — 12:15 a.m.

(Zone 6)

BELLFLOWER & STEARNS, Long Beach. H. E. TASKER (5437-55192, Ext. 2328). GE 8-8025. 6-6

### RIDES WANTED

3:45 p.m. — 12:15 a.m.

(Zone 14)

WEST PART OF VALLEY (SAN FERNANDO). Reseda. (Rider wanted in western part of Valley to share.) DOUGLAS K. MONTE (5163-50006, Ext. 2071). DI 5-4127. 6-14

4:45 p.m. — 1:15 a.m.

(Zone 3)

SAN BERNARDINO FREEWAY & SAN ANTONIO AVE., Pomona. E. O. HILTON (5568-22511, Ext. 1587). LY 6-2520. 8-3

(Zone 6)

PACIFIC COAST HWY. & MAGNOLIA, Long Beach. C. B. ROGERS (5566-51812, Ext. 1589). HE 7-3874. 8-6

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 3)

SAN BERNARDINO RD. & VALENCIA PL., Covina. C. W. RYAN (7721-11864, Ext. 771). 12-3

(Zone 5)

HWY. 39 & CHAPMAN, Anaheim. (Via Chapman, Harbor Blvd., Santa Ana Freeway, Rosecrans, Crenshaw.) J. W. GRAY (5501-17617, Ext. 2200). TW 3-8959. ORANGETHORPE & BROOKHURST, Fullerton. (Car Pool desired—Mariposa). ALLEN R. SACKETT (6230-52057, Ext. 484). LA 5-5030. 12-5

(Zone 6)

LA PALMA & KNOTT AVE., Buena Park. (Car Pool desired—am in Building 21.) ROBERT GELLER (5353-53839, Ext. 2347). LA 2-7676. 12-6

SPRING ST. & STUDEBAKER RD., Long Beach. DEL E. EVANS (5221-54836, Ext. 2203). HA 9-3659. 12-6

7:30 a.m. — 4:15 p.m.

(Zone 14)

VENTURA BLVD. & TOPANGA CANYON BLVD., Canoga Park. WILLIAM R. FAUGHT (8930-32246, Ext. 2717). DI 0-7216. 13-14

8:00 a.m. — 4:45 p.m.

(Zone 3)

CITRUS & SAN BERNARDINO FREEWAY, Covina. CLINT COMERFORD (3146-54846, Ext. 750). ED 9-7033. 15-3

HOOVER & CENTURY, Los Angeles. W. W. WEBSTER (2812-12638, Ext. 581). 15-6

(Zone 5)

BROOKHURST & LINCOLN, Anaheim. (Need one more driver to fill out car pool.) ANN RYAN (3142-32958, Ext. 2022). JE 7-2555. 15-5

(Zone 6)

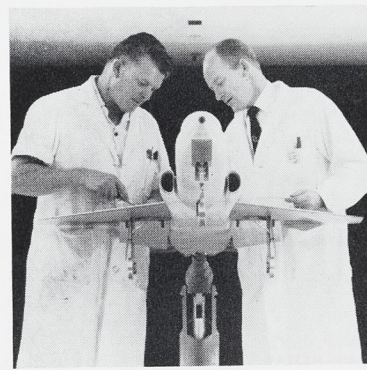
STUDEBAKER RD. & STEARNS ST., Long Beach. (Will pick up anywhere between home and plant 2.) LOUIS A. WYNANTS (2812-12605, Ext. 581). GE 1-3731. 15-6

(See GMW, Page 4)

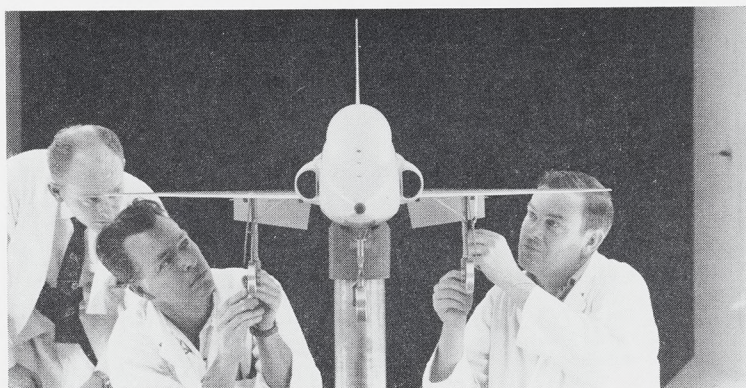
**SCALE MODEL**—Exact scale models, accurately detailed and balanced, are used in the tunnel tests. Right, Graham, McQueen and Howe observe the trim, clean lines of T-38 wind tunnel model. This airplane is designed to provide the USAF with a low-cost solution to the supersonic training program. The N-156F is tailored to the specific needs of the NATO and SEATO countries. Its production costs are half that of heavy jet aircraft, and fuel consumption is less than half that of comparable planes.



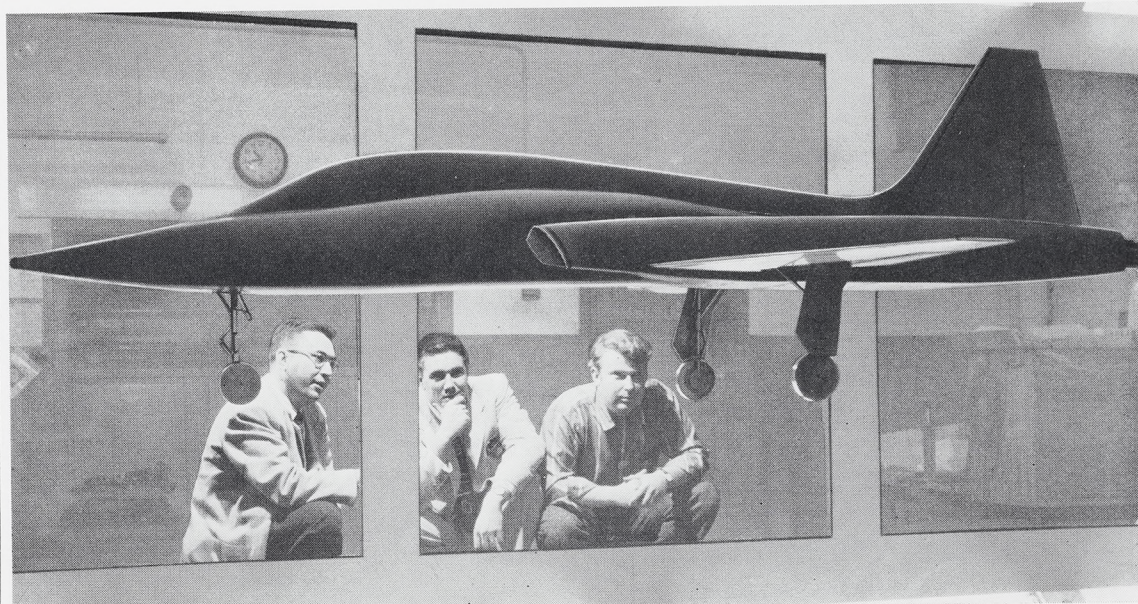
**WIND TUNNEL**—As reported in News Briefs last issue, Northrop engineers are using wind tunnel to test and check every feature that is state-of-art including problems encountered up to now in century series aircraft. Above, Sam Srodulski and Ken Yost at wind tunnel control console; Jim McQueen of T-38 Aerodynamics group, standing at left.



**TEST MODEL**—Above, Les Schneider and model designer Fred Dunn prepare one-seventh scale model of T-38 for tests. Upper right, Linc Blevins and Dunn install wing flaps. Lower right, Howard Fletcher and Roy Gustafson make model change. Note sleek head-on silhouette, knife-like wings.



**SCRUTINY**—After each test run in tunnel, engineers study data to check aerodynamic characteristics. Brought together for such a session are, from left, Bob Katkov, chief of Fluid Dynamics; Jim McQueen; Dabney Howe, wind tunnel test engineer; Dr. Arnold Jensen, supervisor, T-38 Project Aerodynamics; Dave Graham, supervisor, wind tunnel. Rigorous testing is aimed to eliminate usual "bug-chasing" program, save valuable flight time for only the newest and relatively untried advances.





# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

HOUSE, Pacific Palisades. GL 4-2479.  
BOAT, 15', all glass, 40 h.p. outboard motor, w/controls, trailer, \$850. OS 6-4920.  
TIRES AND TUBES, 6.40 x 15, 6.00 x 16, \$3 per tire and tube. PL 4-4384.  
UNIFORMS, 6, white, nylon & dacron, size 12-14, includes 1 maternity. OS 5-9054.  
COLLECTOR'S ITEMS, Ruger .22 single six pistol, Lawrence custom hand tooled gun belt & holster, Bowie knife, \$100. PL 9-9352.  
FORD, 1951 V-8 4-door sedan, extras, \$325. DA 4-0038.  
HALF LAWNMOWER, Penn, \$10. OS 6-8565.  
MOTOR SCOOTER, 1956 Cushman. OS 6-8852.  
TV, RCA 21", mahogany console, \$85. TE 3-3036.  
HOUSE, GI resale, 2-bedroom, w/w carpets, disposal, patio, fenced, Crenshaw Villa, near Rosecrans & Crenshaw. DA 5-5474.  
RANGE, O'Keefe & Merritt, CP, gas, griddle, clock, timer, disappearing shelf & grillvator. DA 3-7505.  
FORD, 1946 club coupe, 1948 Mercury engine, 404 full race cam, 4:11 rear end, 2 spare tires, new battery, customized, rear main out, engine okay, \$125. FR 6-6543, between 12 & 3 p.m.  
VIOLIN, 3/4 size, \$20. EX 7-5221.  
SUIT, boy's, grey, size 12, and white shirt, \$12. Box 1106.  
AUSTIN-HEALEY, 1956, \$750 down, bank finance. OS 6-6821.  
PLYMOUTH, 1948 club coupe, \$135. FR 9-3737.  
ENCYCLOPEDIA, Americana, 30 volumes, including bookcase, \$350. DA 9-9311.  
WASHER, Hotpoint automatic, \$50. FR 5-8550.  
BUICK, 1949 Super, stick shift, \$125. PL 3-9010.  
SHOTGUN, Belgium Browning automatic, 12 gauge, poly-choke, matt rib sight, fitted recoil pad, case, cleaning kit, \$100. AX 4-9182.  
TYPEWRITER, Royal, 14" carriage, late model, \$70. OR 7-8797.  
VACUUM CLEANER, Revelation, all attachments, ottoman case, \$40. DA 4-3998.  
TRUCK, 1957 Chevrolet, Sportsman top with boat carrier & 12' fiberglass boat, 7 1/2 h.p. motor, \$2500 complete. OS 5-2344.  
SLOOP, 18' Mercury class, top racing condition, trailer, all gears. FR 8-2950.  
CAMPING TRAILER, Benroy 2-wheel, innerspring bed, butane stove, 50-lb. ice box, sink, 10 gal. fresh water, \$425. EA 2-5701.  
FURNITURE, foam sectional, tables, lamps, occasional chair, 6 months old, will sell separately. TE 5-3367.  
OLDSMOBILE, 1950 88 4-door sedan, new tires, will transfer insurance till June 1958, nothing down, payments \$30.28 month, pay transfer of title and license, \$375. OR 7-6004.  
DINETTE SET, 4 chairs, \$18. OS 6-3708.

## FOR SALE

FREEZER, Gibson, chest type, 17 cu. ft., \$140. OS 5-1811.  
HEIGHT GAGE, Brown & Sharpe, offset scribe gage, \$60. DA 4-8853.  
WASHER, Kenmore, wringer type, w/balloon rollers. OS 6-6297.  
FREEZER, 22 cu. ft., Rich Plan, used 1 month, 1957 model, take over payments \$32.21 month, 22 months. Box 1103.  
OLDSMOBILE, 1950 98, good tires, body and engine, \$325. PL 8-6695.  
BATTERY, Allstate 46, 6 volt, 100 amp., 45 plates, 30-month guarantee, cost \$14.50, \$8. EA 2-1941.  
TV, Packard-Bell, blonde, cabinet model. OS 5-8088.  
BOAT, 14' fiberglass, outboard, Mercury Mark 20 engine, \$400. DA 4-8432.  
ROTO-BROIL 400 kina size, Fiesta model, automatic infra-red rotisserie, front panel control, timing, never used, \$50. GR 8-5180.  
SECTIONAL, 2-piece love seat, \$35. WE 5-0493.  
CAMERA EQUIPMENT, 35 mm. camera, Argus C-4 w/flash attachment, Argus 300 projector w/case, automatic slide changer, Bergensstadt tripod w/swivel mount, filter, sun shade, cable release, signal timer, 37x50 screen, 9 magazines, \$125. OR 2-3466.  
CHEVROLET, 1957 sport coupe, Powerglide, take over payments of \$86.69 month. TO 6-8955.  
DIVING EQUIPMENT, 1955 Divair regulator, 80-minute tank used 15 hours, \$55. OR 7-4133.  
OFFICE CHAIR, small, w/wheels. OS 5-9454.  
BOAT, 25' cabin cruiser, sleeps 2, Cadillac engine, glass bottom, Philippine mahogany, bait tank, built-in stove, ice box, \$3000. DA 4-7959.  
STOVE, electric, Electromaster 4-burner range, time controlled deep well, oven and outlet, \$50. DA 3-7226.  
MERCURY, 1952 convertible, Merc-O-Matic, new brakes and top, extras. OS 5-8851.  
HOUSE, 2-bedroom, double garage, cement drive, \$11,950. DA 9-4289.  
HOUSE, modern 2-bedroom, w/w carpet, weather stripped, copper plumbing, concrete slab for extra room or patio, near Northrop, \$11,500. low down, FR 6-0645.  
PONTIAC, 1950 Catalina. PL 4-6146.  
HOUSE, 7 rooms, includes 2 baths, 2 kitchens, den. FA 8-7290.  
IRONER, Ironrite deluxe, \$100. FR 9-5144.  
CADILLAC, 1958 62 coupe, power steering, brakes, \$5500, terms. TE 4-7305.  
AUSTIN, 1954 A-40, recently overhauled, \$650. OS 6-6634.  
STOPWATCH, 30-second sweep, 15-minute recording, \$11. Box 1107.  
PLYMOUTH, 1948, deluxe 4-door, \$250. GA 2-2412.  
WASHER, automatic, 1955 Norge, \$75. FR 9-4549.  
COUCH, w/matching love seat, 77" and 37" long, foam cushions, black chenille removable covers, \$79.50. FR 8-2871.

## FOR SALE

SILVERWARE, service for 6, quadruple plated, 1 year old, never used, chest included, \$100. FA 8-6604.  
CHEVROLET, 1948 sedan, good brakes, battery, twin spotlights, \$180. FR 5-5310.  
MOTORCYCLE, 1955 AJS 30.50, single swinging arm, engine recently rebuilt, \$350. FR 6-2578.  
MOVIE CAMERA, 8 mm. Bell & Howell, w/case and daylight filter, \$40. RE 2-9259.  
HOUSE, GI resale, 3-bedroom, 2-bath, 2-year-old contemporary, Holly Park, w/carpets, drapes, landscaped, fenced, extras, \$21,900. FA 1-2327.  
PLYMOUTH, 1957 2-door Savoy custom coupe, take over payments and small equity. NE 5-3573.  
YOUTH BED w/mattress, \$35. DA 6-3235.  
BUICK, 1955 Special, full power, new rubber. FR 9-9988.  
MERCURY, 1949 2-door sedan, \$225. PL 6-6563.  
REFRIGERATOR, 1950 Norge, 6 cu. ft., clock in door, \$40. Box 1105.  
ELECTRIC RANGE, fully automatic, push button control, \$90. GA 4-1863.  
SHAYER, Remington 60, \$8. EX 8-4032.  
REFRIGERATOR, Servel, gas, 1947. OR 7-9265.  
MODEL TRAIN, Lionel, O-gauge, w/accessories. PL 9-6329.  
FORD, 1941 club coupe, new seat covers. DA 4-2409.  
STUDEBAKER, 1950 Starlite coupe, overdrive, \$175. OR 2-3885.  
HUB CAPS, 4, Dodge Royal Lancers, \$30. PL 4-0778.  
HOUSE, 3-bedroom, 4 years old, near Torrance, lawn, fenced, \$12,500, \$50 down, \$25 week. TE 4-7305.  
BED DIVAN, maple arms and legs, bamboo-colored tweed, \$35. PL 4-5909.  
DOG, Boston Terrier, male, good with children. OS 5-9695.  
ENCYCLOPEDIA, complete set, American Peoples, including children's set, w/bookcase. EA 2-3665.  
PUPPIES, Toy Fox Terrier. DA 9-3936.  
STAMP COLLECTION, U.S. and foreign. OS 6-3448.  
CHEVROLET, 1954 pick-up, \$685. LA 1-3002.  
PACKARD, 1951 4-door sedan, \$190. Box 1109.  
STUDEBAKER, 1953 V-8 coupe, overdrive, new paint, \$575. PL 5-3571.  
FORMAL, evening gown, pale green, ankle length, never worn, size 16, \$8. PL 5-8650.  
BABY FURNITURE, high chair, play pen w/pad, \$7.50 each. OS 5-2058.  
IRONER, electric, Kenmore deluxe, \$65. OR 7-4187.  
HOME STUDY COURSE, complete set of books and records in electronics, through television, radar. WE 4-5766.  
ACCORDION, Lakeside 120 bass, case, two treble changes, \$45. FR 9-5597.  
STEMWARE COLLECTION, crystal hand-cut, goblets, champagne, wine, sherbet, cordial glasses, snifters. OR 1-3515.  
HORSES, R. O. quarterhorse, bay mare, 7 years, roper, four white socks, blaze face, gentle, \$250; Palomino mare, 7 years, spirited but gentle, \$200. Box 1113.  
PLYMOUTH, 1957, Belvedere, 4-door, fully equipped, \$700 for equity and take over payments, or will refinance. DA 4-5745.  
WEDDING RINGS, set, \$40. FA 8-0363.  
LOTS, 2, Hollywood Hills above Sunset Strip, \$6500 for both or \$3700 and \$3300. OL 2-9542.  
SCOOTER, Black Eagle Cushman, 1957 model, extras, \$200. PL 3-1937.  
TAPE RECORDER, Magnecorder M-30, \$150. Box 1114.  
HOUSE, 2-bedroom stucco, newly painted, fenced back yard, \$12,500, \$1950 down, DA 4-4569.  
FURNITURE, beige sofa, chair, \$25; green studio couch, platform rocker, \$35; Frigidaire refrigerator, \$30. Box 1116.  
TIRES, 4 new 670x15 cold rubber recaps. \$7 each. DA 3-5830.  
WASHER, Westinghouse automatic, model L-5 laundromat. DA 3-0270.  
HOUSE, 6 yr. old 2-bedroom, garage, 55'x150' lot, fenced, near Northrop, schools, shopping, Imperial Village, \$14,500. OS 5-6721.  
APPLIANCES, Hotpoint automatic electric range; Crosley Shelvador refrigerator, \$30 each. FR 5-9612.  
ENCYCLOPEDIA, American Peoples, Box 1112.  
HOUSE, 3-bedroom, carpets, drapes, patio w/fireplace, landscaped, low monthly payments, 4 1/2% loan, cash to loan, \$14,500. TO 6-5438.  
STEEL GUITAR, electric Hawaiian, Rickembacher, w/case, \$30. OS 5-0674.  
HOUSE, Rolling Hills, new, 2400 sq. ft. corner lot, near elementary school, 3 baths, family room, den, 3 bedrooms, \$31,250, \$8500 down. PL 5-6610.  
SKI BOOTS, women's size 6 1/2, \$10. FR 5-6395.  
NASH, 1957, Ambassador, V-8 sedan, weather eye, power brakes, steering, \$2450. AN 2-8379.  
SPACE HEATER, 2-burner gas hot plate and barbecue unit with grill. OS 6-6361.

## FOR SALE

LOOM, 54" Jack & assorted yarns, \$125. CI 3-3075.  
CHEVROLET, 1953 Bel Air Sport Coupe, Powerglide, \$695. OR 4-6816.  
TRUCK, 1946 Dodge, 1/2-ton pickup, \$165. OR 2-8430.  
VINCENTE RAPIDE, 1949, recent overhaul, \$450. PL 9-8956 before 3:00 p.m.  
LAWN MOWER, 18", 4-cycle Briggs & Stratton engine, cost \$134, \$85. DA 3-2486.  
CAR ACCESSORIES, tire and wheel for TR-3, new, 550x15 Dunlap, \$20, top and side curtains for TR-3, used, \$50. Box 1102.  
LOT, 1/2-acre, Rolling Hills, Westfield area, 103' level frontage, terms. OS 5-4134.  
MOTOR, 8' outboard hydro-plane, Mark 25, \$395. FR 4-0976.  
SKYWRITER, B. T. 13, partnership, modified, 20 hrs. on P. W., R-985 engine, licensed. FR 5-6949.  
WASHER, Kenmore semi-automatic, \$40. DA 9-1278.  
STATION WAGON, 1949 Ford, \$125. EX 4-3642.  
RINGS, 3 ring set, 1/2-carat single diamond engagement, white gold & 2 plain white gold bands, \$250. Box 1115.  
CAMERA, Roliflex, built-in light meter, Planar 1:3.5 lens, filters, auxiliary close view lens, \$190. OS 9-2989.  
VOLKSWAGON, 1957 Ghia, \$2200. EX 3-3320.  
TRAILER, vacation, De Ville, 15', sleeps 5, butane stove & oven, ice box, combination elec. & butane lights, elec. brakes w/car control lever, \$800. DA 6-8747.  
STUDEBAKER, sport coupe, 1947, overdrive, \$100. OS 6-9567.  
**WANTED TO BUY**  
CAMERA, Brownie 500W projector. DA 3-6658.  
FORD, 1953 to 1955, standard shift. Box 1104.  
TONNEAU COVER, 1957 Ford convertible. FR 4-4140.  
SAW, 8" circular, motor, jointer. FR 4-0838.  
CLOCK, 24-hour, not over 6" diameter. Box 1101.  
BICYCLE, boy's racer. OR 7-5080.  
LAWN MOWER, manual and lawn edge mower. EX 8-4032.  
TRUCK, 1931 "A" Roadster pickup or cowl and seat section w/windshield hardware. Box 1110.  
TIRES, 3, 6.70 or 7.10x15. PL 5-3571.

## FOR TRADE

PISTOL, .22, 9-shot frontier style, for low horsepower outboard engine or .22 rifle. FR 4-0976.  
FORD, 1956 Fairlane club sedan, loaded, extras, trade equity for 1953 popular make model. Pay off \$1022. KI 5-1014.  
OLDSMOBILE 88, 1956 hardtop coupe, Hydramatic, power brakes, trade equity for good transportation car. DA 9-2076.  
MERCURY, \$1800 equity in 1957 convertible, power steering, brakes, turnpike engine, for paid up 1955 model or like equity in 1956 model. DA 3-1064.

## FREE (to be given away)

PUPPIES, part Dachshund. AX 3-2252.  
DOG, female, Terrier, licensed, good with children. OS 6-9637.

## RENTALS OFFERED

APARTMENT, unfurnished, 1-bedroom duplex, disposal, carpet, extras, near Northrop. DA 9-9075.  
OFFICES, 3, 10' x 14', air conditioned. OS 5-1169.  
APARTMENT, unfurnished, 2-bedroom, near Northrop, \$100 month. OR 7-4021.  
APARTMENT, bachelor, modern, Manchester-Vermont area, water paid, furnished, private entrance, \$60 month. PL 9-6332.  
APARTMENT, large, 4-room, unfurnished, children O.K., \$65 month. PL 6-6177.  
HOUSE, unfurnished, 1-bedroom, with stove, refrigerator, fenced yard, near South Bay shopping center, \$65 month. FR 2-0840.  
APARTMENT, 2-bedroom, patio, fenced, landscaped yard, new, near Northrop, \$97.50 month. EA 2-1885.  
WANTED, lady to share 2-bedroom house with same. OR 2-5647.  
APARTMENT, large 1-bedroom, ocean view, Manhattan Beach, \$80 month, lease basis, porch, patio. AX 3-2294.  
APARTMENT, unfurnished, new 1-bedroom, automatic furnace, disposal, washer outlet, TV antenna, near schools. Child OK, \$75. PL 8-4249.  
HOUSE, furnished 2-bedroom, available March 10. 1-year lease required. \$125 month, first and last months' rent plus \$50 deposit. Carpeted, water softener, large yard, fenced, garage, near Northrop. DA 9-3246.  
APARTMENT, unfurnished, 2-bedroom, garage, disposal, service porch, newly redecorated, near Northrop, \$95 month. OS 5-5242.  
CHRISTIAN gentleman or lady to share home in Westchester. OR 2-4813.

## RENTALS OFFERED

CABIN, furnished, utilities paid, 1 man only. OS 6-5921.

## RENTALS WANTED

HOUSE, 1- or 2-bedroom, furnished or partly furnished, 2 adults, to \$85 month. DA 9-7723.

## PERSONALS

THANK YOU: I would like to express my deepest appreciation to all Norcrafters for the many thoughtful deeds performed for me in the recent loss of my beloved husband. MRS. CARL ADMIRE.

RUMMAGE WANTED, Sea Scout Ship 2628, for rummage sale, OR 1-8337.

## LOST

WRIST WATCH, lady's white gold, Elgin. NE 1-6560.

## FOR SALE OR TRADE

BIRDS, 80 Parakeets, 6 Cockateils, value \$125, w/cages and equipment, trade for deep freeze, chest-type, or movie camera and projector. OR 1-1660.  
FORD, 1957 convertible, Ford-O-Matic, 245 h.p. engine, power windows, trade for older car, must sell. EX 7-0560.

FREEZER, 17 1/2 cu. ft., upright, Jordan, 1957 model, \$300, trade for good camping trailer, sleeps 4. TW 3-8959.

RING, man's diamond, \$90, or trade for electronic, hi-fi or shop equipment. FR 4-4140.

STUDEBAKER, 1949, trade for 1952-1954 Ford or Mercury sedan. DA 9-6728.

CAMERAS, Argus C-3 wide angle lens w/case and viewfinder, \$29; Keystone K28 Pathfinder 8 mm. movie camera, F2.8 lens, \$25, trade one or both for good .22 revolver. OR 4-4217.

MG, 1955, TF 1500, wire wheels. FR 5-3227.

LOT, 25'x100' in Big Bear annex, will sell or trade for late model pickup truck. EX 8-5201.

VELOCETTE, 1953, completely overhauled, trade for 2-stroke scrambler. OS 5-1835.

RING, woman's 21-diamond cocktail w/rubies, \$300 or trade for diamond wrist watch of same value. DA 4-5745.

CAMP TRAILER, Teardrop, butane tank & 3-burner stove, sleeps 2, \$150 or ? Box 1111.

ELECTRONICS, Jackson signal generator, model 106 & Cornell-Dubilier capacitance bridge, model BN, \$35 for both or trade for good FM tuner. FR 5-8263.

# More GMW

(Continued from Page 3)

## RIDES OFFERED

8:00 a.m. — 4:45 p.m.

(Zone 8)

WESTERN & 25th, San Pedro. (Desire to obtain ride or join a car pool. Have parking lot pass.) V. NESPOLO (3546-30677, Ext. 2063). TE 1-2973. 15-8

(Zone 10)

HIGHLAND & 4th or 5th, Manhattan Beach. (Would like to exchange rides.) SYBIL V. APGAR (3120-12586, Ext. 1395).

3:45 p.m. — 12:15 a.m.

(Zone 6)

BELLFLOWER & STEARNS, Long Beach. H. E. TASKER (5437-55192, Ext. 2328). GE 8-8025. 16-6

(Zone 14)

WEST PART OF VALLEY (SAN FERNANDO), Reseda. (Rider wanted in western part of Valley to share.) DOUGLAS K. MONTE (5163-50006, Ext. 2017). DI 5-4127. 16-14

4:45 p.m. — 1:15 a.m.

(Zone 3)

SAN BERNARDINO FREEWAY & SAN ANTONIO AVE., Pomona. E. O. HILTON (5568-22511, Ext. 1587). LY 6-2520. 18-3

(Zone 9)

INGLEWOOD AVE. & ALVORD LANE, Redondo Beach. (Via Inglewood Ave., 182nd, Hawthorne Blvd., Redondo Beach Blvd., Prairie.) F. R. STEESE (5221-54843, Ext. 2203). FR 6-5904. 18-9

# ACACIA CLUB—OFFICER NIGHT

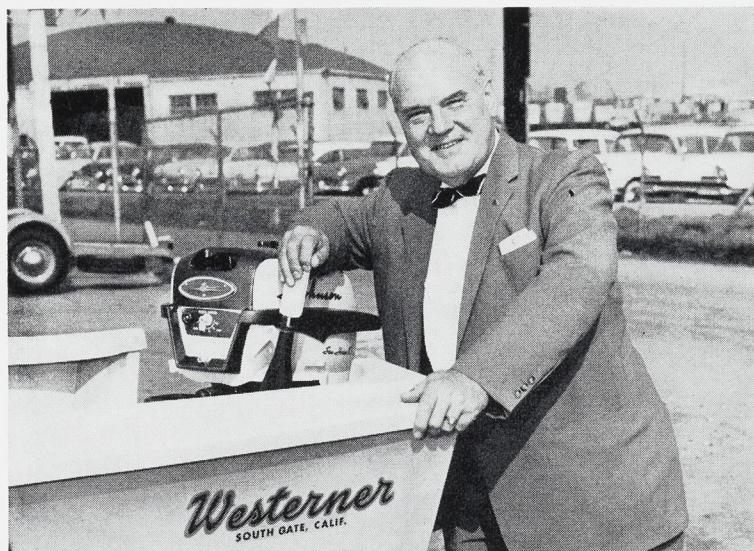
The Northrop Flying Wing Acacia Club last week held its seventeenth annual installation of officers with a dinner-dance at the Huddle Restaurant.

The officers installed were President, Howard Cornelius; Vice Presidents: Charles Murray, Floyd Nellor, Bob Wygant, Walt Duffy, Jim Murphy, Carl Liedtke, and Al Payne; Secretary, George Sanborn; Treasurer, Dick Ahrendts; Board Chairman, C. George Keller.



YOU DON'T HAVE TO WORRY ABOUT LOOSE TALK  
AROUND HERE — WHY, THERE ISN'T A SPY  
WITHIN MILES!





**A BOAT FOR HIS TALENT**—Norcrafter Bob Rauh of Art Services department won new boat and outboard motor for his entry in the Mirror-News "Color the Boat Contest". Coincidentally, this was the second year of the contest and the second Norcrafter winner. Art Services Joe Kalina was last year's top winner. Let's have a race!

## Northrop Mixed Chorus In L. A. Choral Festival

The NRC Mixed Chorus will join with eight other choruses for a spectacular 250-voice finale to the fourth Annual Business and Industry Chorus Festival. Sponsored by the Los Angeles City Bureau of Music, Department of Municipal Arts, the festival will be held Saturday, March 1, 8:15 p.m.

All Norcrafters, their families and friends, are cordially invited to attend the festival at the East Los Angeles Junior College auditorium, corner Atlantic Boulevard and Brooklyn Avenue.

Under the direction of Charles Nixon and accompanied by Lillian Lubie, the NRC Mixed Chorus will sing Campbell Tipton's "Spirit Flower" and Schubert's "Ave Maria." The NRC Chorus is the first of nine choruses on the program.

The finale with all nine choruses participating will feature

Schubert's "The Omnipotence," a medley of Vincent Youman's selections, and "Battle Hymn of the Republic."

Also participating in the festival will be the Los Angeles Civic Concert Orchestra under the direction of Arthur J. Babich, conductor.

## New NRC Camping Club Plans First Outing at Next Meet

Their weekend retreat is the great outdoors. Mountains and streams, fields and trees form the backdrop for their leisure time activities.

The activity is the new Camping Club sponsored by NRC with Fred Brant as acting commissioner. Following first meeting of the group, it is planned to

hold regular meetings each first Monday of the month.

Next meeting is slated for Monday, March 3, and all interested Norcrafters and their families are extended an invitation to attend. Plans for the first weekend camping trip will be made at this meeting.

Fred Brant asks that all those planning to attend bring color slides of different camping areas. These will be shown as possible camp sites for future outings.

Meeting time is 7:30 p.m. at the NRC Clubhouse, Hawthorne Boulevard.

## Famed Artist to Judge Art In Purchase Prize Exhibit

One of America's great marine and landscape artists, Paul Lauritz, has accepted an invitation to head the list of judges for the Eleventh Annual Purchase Prize Art Show slated to open March 24.

Mr. Lauritz's painting, "Golden Valley," hangs in President

Eisenhower's office in Washington and one of his famous seascapes hangs in the Palace of the Kings in Oslo, Norway.

Mr. Lauritz is a past president of the California Art Association and is now a member of the board of directors of the Association.

## FIVE CATEGORIES SET FOR ANNUAL NRC PHOTO SALON

Five categories of photographic competition were announced for the NRC Camera Club Annual Salon slated for Wednesday, March 19.

Awards will be made to the top three entries in each of the following categories: portraits, landscapes, pictorials, children and pets, and still life. In addition, there will be a sweepstake award for the best print in the show, according to Steve Marstaller, Camera Club commissioner.

Eligibility for competing was set forth as follows: Norcrafters who have entered at least one other competition during the past year. Entrants must be active members of the Camera Club, that is, must have attended at least three consecutive meetings and one of the last three.

A maximum of four photos can be entered, excluding any

This year's show will have entries in two categories: Class A for amateurs who have not sold art work, and Class B for professionals and semi-professionals who have sold paintings. Included in this latter class are all personnel classified as commercial artists, industrial artists and technical illustrators.

Entries will go on exhibit in the Plant III cafeteria March 24. Deadline for entries is March 20, with paintings to be submitted to Personnel Activities office. The exhibit will move to the Plant I cafeteria April 7. Following judging, a public showing will be held at the NRC Clubhouse.

prints entered in any previous competition.

All Norcrafters, their families and friends, are invited to visit the display of entries at the NRC Clubhouse, Hawthorne Boulevard, March 19 at 7:30 p.m.

Judges for the annual photo salon will be announced.

# SPORTS

The Northrop News

## Annual Spring Bowling Tournament Set for April, Registration Opens

Big news for doubles bowlers. Following results of the largest industrial tournament ever rolled in the West is the announcement of the Annual Spring Doubles Tournament.

The event this year will be held again at Windsor Bowl. Dates include the weekends of April 12 and 13, 19 and 20, and 26 and 27. Commissioners Lloyd Forstrom, Joan Sittauer, Charlie George and Mary Mimnaugh announced that entries opened on Monday of this week and will close March 17.

They said that the addition of a husband and wife doubles event last year proved so popular that it was carried over into the past Christmas holiday tourney and will also be featured in the Spring Doubles.

A second new event scheduled for this year's big go is the Scratch Singles event for men. This event, they said, will be a four-game contest played on eight alleys. It will be rolled Sunday, April 20.

Complete details on all events

are available now through the Personnel Activities office, all plants. Entry forms are available from league secretaries and Personnel Activities. All Norcrafters, members of their families, USAF and resident subcontract personnel are eligible to compete.

## Toastmaster Club Holds Successful Ladies Program

Ladies' night, held by Northrop Toastmaster Club 2583, turned out to be a gala affair for members and their wives. Held at Kim's Restaurant February 15, the dinner meeting featured a humorous takeoff on the Groucho Marx "You Bet Your Life" television show.

Playing the role of Groucho was Ray Modiano. Club members and their ladies participated with Mr. and Mrs. Rudy Plummer topping the contestants.

Following the dinner portion of the program, the club staged its serious speakoff contest. Winner announced by Howard Cornelius, president, was Walt Gray. He will represent the club in a speakoff contest slated March 8.



**WINNERS**—Mr. and Mrs. Rudy Plummer topped contestants. Ray Modiano played Groucho Marx role.

tract personnel are eligible to compete.

Trophies will be awarded in four events: Men's Doubles—Class A and B; Women's Doubles—Class A and B; Mixed Doubles—Class A and B; and Husband and Wife Doubles—Class A and B.

In addition there will be trophy awards in the Men's Scratch Singles and special trophies for men's hi-scratch series, men's hi-series with handicap, and men's hi-scratch game. There will be awards to women bowlers in each of these categories also.

The commissioners suggest early registration to all those planning to enter.

### SPECIAL NOTICE

Summer bowling leagues will start forming March 1. Entry forms, including all necessary information, will be available at that date through Personnel Activities offices.

## GEM & MINERAL CLUB PROSPECTS FOR ROCKHOUNDS

The NRC night shift Gem and Mineral Club is on the search. They're looking for new members interested in the fascinating hobby of prospecting and handicraft, states commissioner Victor Lincoln.

All night shift Norcrafters and their families are extended an invitation to join the group's activities. Club meetings are held each first and third Wednesday of each month, 1:30 p.m. at the NRC Clubhouse.

Among the Club's program of activities are jewelry making and field trip campouts. Next planned prospecting trip will take members to the Cady Mountain collecting area.

## NRC Good Time Table for March

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days), Jack Duer**  
Meet Wednesday, 6:30 p.m. Archery classes now in session.

**ARCHERY (nights), Mickey Mechling**  
Meet Wednesday, 12:15 p.m.

**ART CLUB (days), Milton Maldenada**  
Meet in Annex every Thursday, 7 p.m.

Models furnished by NRC. Sculpture class meets every Wednesday, 7:30 p.m. 11th Annual Purchase Prize Art Show opens March 24, entries due March 20.

**BIBLE STUDY, Roy Stahl**  
Plant I—Daily, 11:30-12:15, Training

Conf. Room, Tool Design Bldg., 11-11:45, 5587 Conf. Room.

Plant II—Mon. & Thurs., 12:15 - 1 p.m., Conf. Room 2.

Plant III—Daily, 12:15 - 1 p.m., Conf. Room 5.

Torrance—Tues. & Thurs., 11:30-12:15, Bldg. K2 Conf. Room.

**BOAT CLUB, Steve Sabo**  
Meet 1st Wednesday of month, 7:30.

Night shift meets 3rd Thursday of month, 2:30 p.m. Water Ski Club Days meets 3rd Thurs., 7:30 p.m.

Safety meetings every Thurs. at the U.S. Naval Reserve Training Center, 201 W. 126th St., Hawthorne, (Cor. of Greville Ave.) 7:30.

**BOWLING (days), Lloyd Forstrom**  
Bowling (nights), Charlie George

Register now for Spring Doubles Tournament. See story, above.

**BOY SCOUTS, Stan Morris**  
Sea Scouts, Intermediate, Cub Scouts, All Norcrafter boys welcome.

**CAMERA CLUB (days), Steve Marstaller**  
Meet 1st and 3rd Wednesday, 7:30 p.m.

Annual photo salon March 19, NRC Clubhouse.

**CAMPING CLUB, Fred Brant**  
Meets every 1st Monday of month.

Next meet March 3, 7:30 p.m.

**FISHING (day and night)**  
Register fish for NRC awards with card available at Personnel Activities.

**GEM & MINERAL CLUB (days), Raymond Cole**  
Mineralogy class now in session. Meet every Thursday, 7 to 9.

**GEM & MINERAL CLUB (nights), Victor Lincoln**  
Meet 1st and 3rd Wednesday of month, 1:30 p.m.

**GOLF (days), Charles Penegar**  
GOLF (nights), Leo Baker

Summer twilight leagues now being formed. Contact Personnel Activities for schedule and details.

**GUN CLUB (days), Carl Turner**  
Meet 3rd Wed. of the month at 7:30 p.m.

Pistol shoot at Torrance, 2 p.m., Sunday, March 9. Rifle shoot at Torrance, 1 p.m., Sunday, March 16.

**MIXED CHORUS, Bill Porter**  
Meet every Tuesday 7:30 p.m. All Norcrafters welcome. Will appear in 4th Annual Business and Industry Chorus Festival, March 1, 8:15 p.m., E. Los Angeles Junior College. See story, above.

**MODEL RAILROAD, Jack Wilson**  
Meeting every Thursday evening from 7 to 10 p.m. in Annex. Visitors welcome.

**PHILATELIC, Robert Van Rensselaer**  
Meet 2nd and 4th Mondays, 7 p.m.

**RADIO CLUB (days), Phil Kramer**  
Meet last Thursday of month in Annex, 7:30 p.m. Radio Code Class meets every Wednesday evening, 7:30 p.m. NRC's Station is W6VPZ.

**RADIO CLUB (nights), Merwin McGrew**  
Meet the last Thursday of the month at 1:30 p.m.

**SKEET CLUB, Harold Bowers**  
Meet every other Saturday at Long Beach Dominguez Gun Club on Artesia Blvd., 10:30 a.m., March 1, 15 & 29.

**SKI CLUB, William Loomis**  
Outing to Mammoth, March 1 and 2.

Meet the 2nd and 4th Wednesdays of the month at 7:30 p.m.

**SKIN DIVING (days), Ralph Gonzales**  
Meet 3rd Monday of the month at 7:30 p.m.

**SKIN DIVING (nights), Lillian Kemble**  
Meet 3rd Wednesday of month, 1 p.m.

**SPORTS CAR CLUB, Bill Hanna**  
Meet 2nd Thursday of month, 7:30 p.m.

March 16: Gymkhana Del Camino (members only), repeat March 23 for all interested personnel.

**SQUARE DANCING, Roy Jackson**  
Beginners class starting 2nd, 3rd, 4th, and 5th Sundays, Gardena Barn, 15016 Daphne St., Gardena, 3 to 6 p.m.—Regular Sessions 1st, 2nd and 4th Sundays at 8 p.m.

**SURF FISHING, John Pawlicki**  
Meet 1st Tuesday of month, 7:30 p.m.

This month's clinic: bait handling.

**TOASTMASTERS 212 (days), John Langdon**  
Meet every Thursday evening, 6:30 p.m., Western Avenue Country Club.

**TOASTMASTERS (days), Howard Cornelius**  
Meet every Thursday evening 6:15 p.m., "Kims".

**TOASTMASTERS (nights), Ray Grish**  
"Gondolier", corner of Imperial Highway and Prairie.

**FOR THE LADIES**

**BOWLING (days), Joan Sittauer**  
Bowling (nights), Mary Mimnaugh

Register now for Spring Doubles Tournament. See story above.

**GIRL SCOUTS, Helen Maupin**  
Mariners, Intermediates, Brownies. All Norcrafter girls welcome.

**TOASTMISTRESS, Vicki White**  
Meet in NRC Clubhouse Board Room, 1st and 3rd Thursdays, 7 p.m.





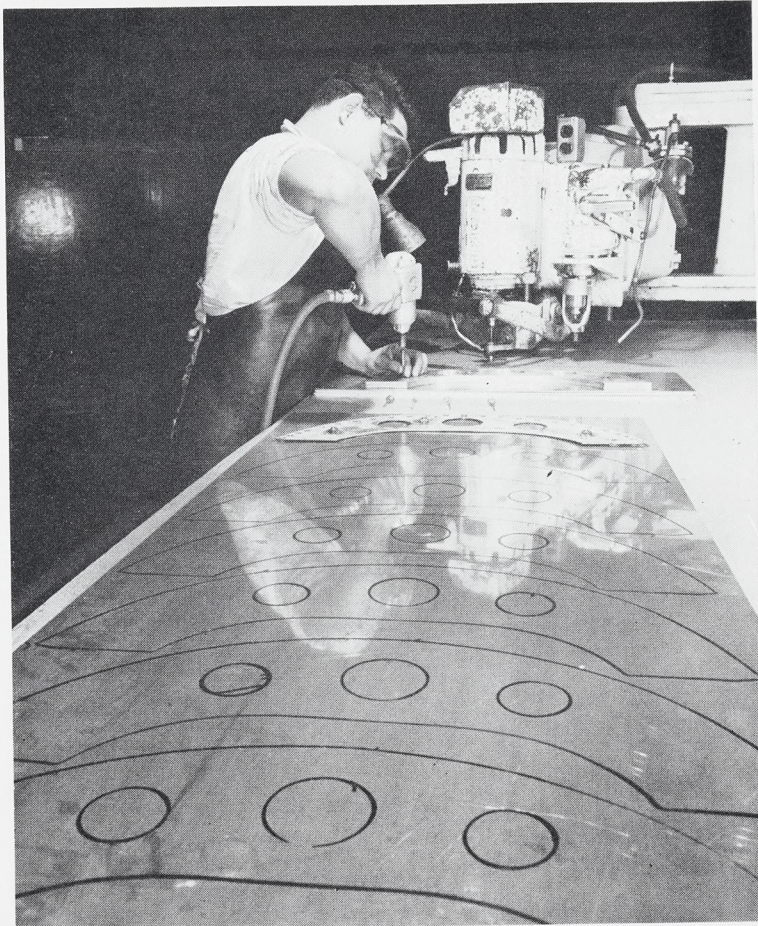
**FEATURES OF APAC** — new Nortronics airborne computer, are shown by Carol Halverstadt. Small, light

and rugged, the electronic computer has been designed for airborne applications and features full transistorization. "APAC", which stands for Airborne Parabolic Arc Computer, has been packaged into 1½ cubic feet. Unit weighs less than 100 pounds.

**NEW WAY**—Better quality, lower cost way of drilling and routing parts on Boeing project is illustrated

here. Foreground, old way with each piece worked separately—time consuming and susceptible to error. New way, background, with many pieces made in one operation from single template; Armando Ramos on the job. Improvement is a good example of shop keenness in upping quality and lowering the cost.

## Shop Innovation



**FOR THE ATOM-ARMED SCORPIONS**—Wing tip tanks are being produced at Northrop for the staunch F-89J. Above, Robert Allen, Machine Shop, turns one of the tank inner support rings to spec on a giant vertical lathe.



## Northrop News Pictorial

**FIFTEEN-YEAR FOLK**—Norcrafters who came to work on the Black Widow back in the winter of 1942, and stayed, meet at the NRC clubhouse to receive their 15-year pins and congratulations from General Manager Robert R. Miller, photo'd here, center, with group. Occasion served to renew old acquaintances, recall events of last decade and a half. In an informal talk before the group Mr. Miller stressed maturity of company, outlined future prospects.

**ROBERT R. MILLER**, Northrop vice-president and general manager, addresses kick-off dinner of the Centinela Valley YMCA Development Fund Campaign at the Mayflower Ballroom, Inglewood. From left at head table, Mrs. Vernon P. Spencer, Mrs. Norvel E. Surbaugh, The Honorable Howard Pyle, deputy assistant to President Eisenhower for Federal-State Relations. "Support of YMCA," stated Mr. Miller, "lends helping hand to the community's youth programs combating juvenile delinquency."





## NEWS BRIEFS

**BOARD OF DIRECTORS**—Northrop Board met last week, declared 40¢ dividend for stockholders of record 10 March, payable 22 March, it has been announced by President Whitley C. Collins. It was also announced that the trust agreement with the Chase Manhattan Bank of New York, for Northrop's new variable annuity retirement plan had been approved. Application for plan approval by the U. S. Treasury Department and by the Air Force has been made and is now in process.

**COSTS AND BUDGETS**—Dan Hill, Northrop treasurer, reports that a new department, Costs and Budgets, has been established within the Finance Division effective 1 March, Robert M. McNamara, director. "This department," stated Mr. Hill, "will concentrate special attention on the cost and budget picture at Northrop, and will emphasize the importance of these financial factors. Its organizational position will enable it to render effective and comprehensive services to all divisions and departments. The appointment is in line with basic company policy to furnish quality products at the lowest possible cost—." McNamara is a 17-year Norcrafter with long experience in accounting and finance. He has been on duty at the Anaheim Division since 1951 where he was manager of Accounting, Finance and Administration.

**NORTRONICS BUSINESS PROPOSALS**—Nortronics has already received requests—on specific tasks and associated cost and schedules—from many segments of industry which will make use of Nortronics' electronic, electro-mechanical, and precision experience. Nortronics Engineering is now in the process of formulating preliminary analyses so that the Division may answer these requests with firm bid proposals. "It is gratifying to the Division to receive these requests which are substantial both in number and in substance," stated Dr. Ballhaus. "Evidently our success with the Snark guidance development, Northrop's established record on quality and costs, plus our ability to meet schedules, is responsible for this immediate response."

**MANAGEMENT COURSES**—"The Management Process" is the title of two courses now under way at Los Angeles Trade Tech for day and night shift supervisors. Staffing and coordination is by Industrial Relations. Topics include long-range planning, policy formulation, organization line staff relations, and financial control. The courses are off company time. They are designed to offer supervisory personnel every opportunity to increase knowledge along lines that will develop administrative and managerial capabilities. Top management members already scheduled to address the classes: on March 6—Tom Jones, vice-president, Development Planning, for long-range planning; March 13—Dr. William F. Ballhaus, vice-president and general manager, Nortronics Division, for policy formulation; April 10—P. W. Timberlake, vice-president, Organization, for organization; May 1—Jack Mannion, assistant to the general manager, Northrop Division, for line staff relations; June 12—Frank Barnard, controller, Northrop Division, for financial control.

**DEVELOPMENT PLANNING**—Crystallizing the long-range planning declaration (See Northrop News, 26 February) Northrop's vice-president and general manager, Robert R. Miller, has (See **NEWS BRIEFS**, Page 3)

## Nortronics Applications Engineer Appointment

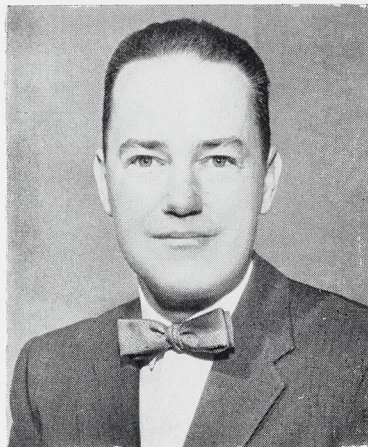
The appointment of Tom J. Venator as chief Applications Engineer of the Electronics Systems and Equipment Division of Nortronics has been announced by Fred Stevens, Operations Manager.

Another recent high-level Nortronics appointment was that of Ross Miller to chief engineer— (See Northrop News, February 26.)

Mr. Venator was formerly west coast sales manager for the Air-Arm Division of the West-

inghouse Corporation, and has been active in the electronics field for more than 15 years. As chief Applications Engineer he will be in charge of product development and sales programs in the electronic systems and equipment area.

Mr. Venator is a graduate of the South West Louisiana Institute and holds the degree of Bachelor of Science. He is a member of the Institute of Radio Engineers and the Aircraft Electrical Society.



TOM VENATOR



ROSS MILLER

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, March 12, 1958

## German Air Force Views N-156F



**VISITORS FROM GERMANY**—Lieutenant General Josef Kamhuber, chief of the German Air Force, fourth from left, headed a distinguished group of German air force and defense officials who visited Northrop last week on review of N-156F counter-air fighter program underway here. Hosted by Northrop President Whitley C. Collins, third from right, General Kamhuber's group included, from left: Lieutenant Colonel G. S. Dr. Hempel, Colonel August Hentz, Ministerialat Dr. Bennecke. With Mr. Collins, above, Mr. Edgar Schmued, engineering consultant to Northrop. On right is U.S. Air Force Colonel Luther Richmond, escort officer for the German officials.

## Engineering Open House March 29, All Norcrafters and Families Invited

Open House for the new Northrop Engineering science center has been set for Saturday,

March 29, it was announced by George Douglas, vice-president, Engineering.

### Name Collins To Caltech Trustee Board

Whitley C. Collins, president and chief executive officer of Northrop Aircraft, Inc., has been elected a member of the board of trustees of the California Institute of Technology, it was announced by Albert B. Ruddock, chairman of the board.

Board membership which has guided the destinies of the Institute for over half a century is made up of Southern California industrial and civic leaders who represent the highest community spirit and foresight in educational aims and facilities.

Caltech was founded in 1891 as Throop Polytechnical Institute with campus in downtown Pasadena. Move was made to the (See **CALTECH**, Page 3)

### Ballhaus Heads French Missile Survey Group

Dr. W. F. Ballhaus, general manager, Nortronics Division, recently spent three weeks in France and North Africa, as chairman of the Defense Department sponsored Missile Survey Group.

The group, consisting of eight authorities from American industry and military, toured defense establishments in France and visited the French North African missile range in Colomb-Bechar. (See **MISSILE**, Page 3)

All Norcrafters, their families and friends are invited to tour the new research and development facilities where the Snark, T-38, N-156F and future space projects are being engineered. Doors will be open from 12 noon till 5 p.m.

(See photo, Page 6)

Since admittance requires presentation of badge and ID card, each attending Norcrafter may play the role of guide and escort his own guests along the roped-off route. An itinerary will be illustrated in the March 26 issue of the News.

Open House buildings will include Engineering Center, Prod-

uct Display Building, Model Shop, Wind Tunnel, Engine Test (See **OPEN HOUSE**, Page 3)

### State Handles Disability Pay From April 1

Effective April 1, 1958, Disability Insurance Benefits will be paid by and handled through the Department of Employment offices in the State of California, it has been announced.

These benefits have previously been paid through Northrop Group Insurance department, but revisions in the law have made (See **DISABILITY**, Page 3)

## F-89J Record Praised

The F-89J production phase-out on February 21, at Palmdale, was accomplished two weeks ahead of schedule. Complimenting the Division on this accomplishment and on the low cost performance of the program, President Whitley C. Collins wrote the following memo to General Manager Miller:

"It was most gratifying to learn that the manufacturing phase of the F-89J program has been successfully concluded two weeks ahead of schedule, with a desirable underrun in costs.

"Your Division is to be congratulated upon this efficient performance, for I understand that, in addition to the satisfactory cost condition, our deliveries to the U. S. Air Force were consistently on schedule and the quality of the product remained high until the last aircraft was delivered. This performance is significant when it is realized that the work was completed in the face of the close-down of operations by this Company at the Palmdale facility, and is a tribute to the spirit of cooperation and high morale which is so essential to the successful conclusion of any endeavor.

"I also learn that the efforts of the supervisory staff at Hawthorne to use the skills and experience of many of the Palmdale Norcrafters had done much to keep up the morale during the closing days of this program. Colonel Simcoe, AFPR, and his staff have been most complimentary on our performance on the F-89J program.

"Please convey my personal congratulations to all sections of your Division which were responsible for this fine effort."



# McDonnell Supersonic Fighter Production

## EXTENSIVE SKILLS, CAPABILITIES ASSIGNED TO VOODOO PROJECT

Three Voodoo airplanes streaked across the U. S. continent from Los Angeles to New York. They were traveling far beyond the speed of sound. They slowed only to take on JP-4 from aerial tankers along the route.

One of the Voodoos landed in New York. The other two made a 180 and headed back to Los Angeles. When they landed, three transcontinental speed records had been shattered.

This outstanding performer called the Voodoo is McDonnell Aircraft's supersonic twin jet F-101 Air Force fighter for which Norcrafters build a major fuselage section.

The new transcontinental records set by the Voodoos—

Los Angeles to New York: 3 hours, 7 minutes.

New York to Los Angeles: 3 hours, 36 minutes.

Los Angeles to New York to Los Angeles, round trip: 6 hours, 46 minutes.

All this on November 27, 1957. A few days later, on December 12, a new official world speed record of 1207.6 miles per hour was set by still another Voodoo.

Norcrafters also had an indirect hand in the latest disclosure of the F-101's dramatic operational life. On January 15 of this year, the Air Force unveiled the new F-101B equipped with lethal MB-1 Genie atomic air-to-air rockets. Historic first firing of the Genie by a Northrop-built F-89

Scorpion last year paved the way for aircraft such as the F-101 which now carry the highly potent air defense missile.

Norcrafters started work on the F-101 in early 1955 when McDonnell placed a subcontract for the aft fuselage section. Since then follow-on orders have been placed, with more under negotiation. This carries the business through August 1959 with additional follow-ons possible beyond that date.

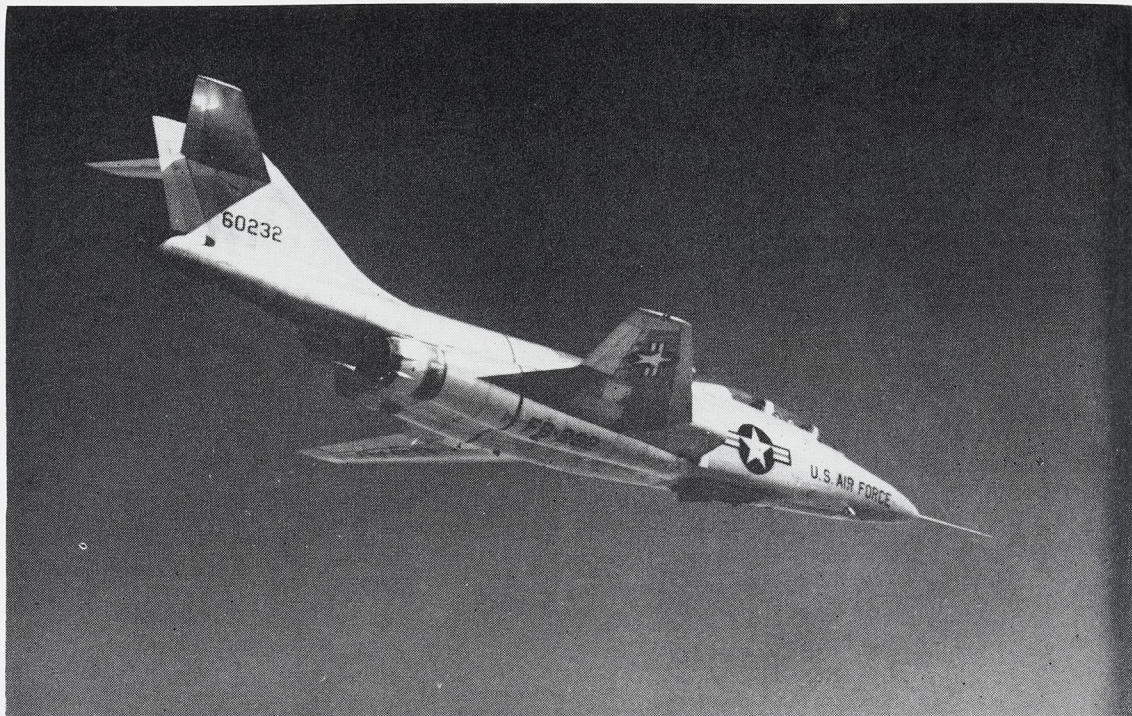
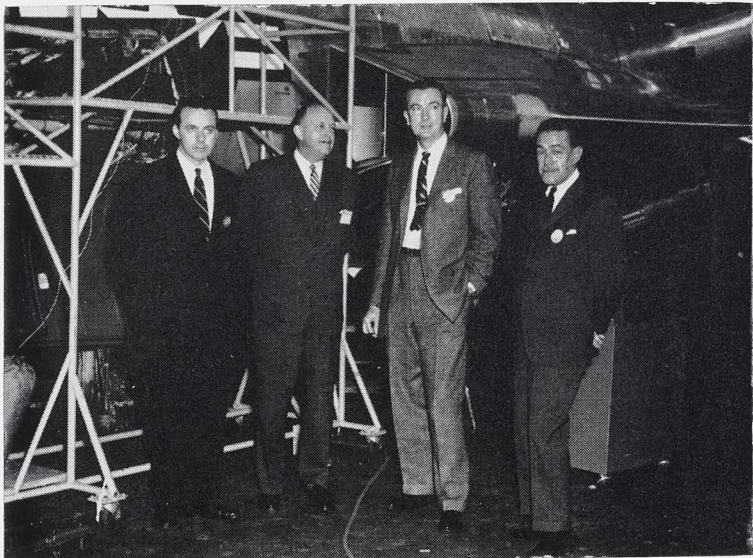
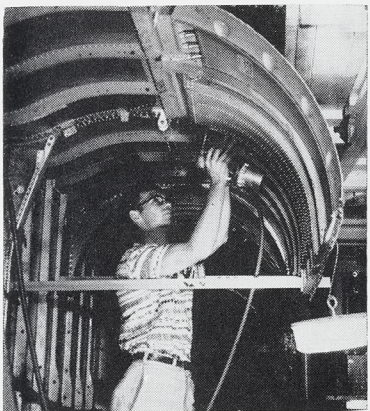
Successful performance on the F-101 subcontract is of threefold significance to Norcrafters. It is the first major subcontract taken on by Northrop in the current production program, the first Northrop-McDonnell joint effort, and the base for a second McDonnell subcontract also underway at Northrop—the Navy F-4H project.

Although the configuration of the F-4H and its performance characteristics are restricted by security regulations, it has been revealed by McDonnell President J. S. McDonnell that the new plane will be a long-range, supersonic, all-weather, carrier-based Navy fighter. It will be powered by two advanced jet engines and will provide for a radar operator along with the pilot. It will carry air-to-air guided missiles and air-to-ground armament.

Mr. McDonnell stated that the first model of the F-4H is nearing flight status. Total value of orders placed by the U. S. Navy for the F-4H amounts to \$167,207,206.

A highly cooperative working arrangement on these projects characterizes the Northrop-McDonnell joint effort in all departments concerned, commented

**HIGH SKILLS** and production capabilities are concentrated on projects to assure high quality. Left, Norcrafters Jim Grider on the F-101 aft fuselage.



**VOODOO INTERCEPTOR** — McDonnell's F-101B, latest version of the world's fastest fighter, capable of packing an atomic punch. A sister ship, the F-101A, holds the world's speed record of 1207 miles per hour. The photo-recon RF-101 has a top speed in excess of 1000 miles per hour. Norcrafters build aft fuselage sections for the Voodoos, also build major airframe units for the F-4H.



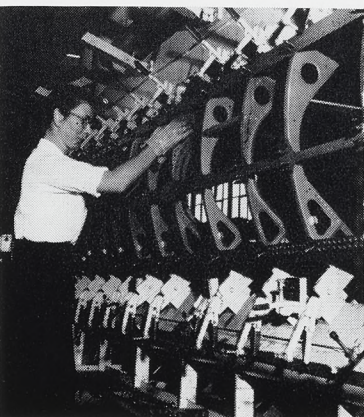
**CLOSE TOLERANCE MACHINING** — F-101 afterburner access panel, machined on numerically-controlled profiler is examined by, from left: Harry Hopkins, machine shop foreman; George West, Fabrication head; Bob Lloyd, chief, Manufacturing Engineering; Jack Stiehl, manager, Contract Administration; and C. B. Spencer, assistant factory manager. Close liaison characterizes McDonnell program.

To date, most of the major production problems have been ironed out, Mr. Nolan stated. "Increased emphasis is now being concentrated on improving cost trends in every area—material, fabrication, and assembly, without letting up on the production requirement," he said.

Reason for this emphasis was voiced by General Manager Miller who stated that "future business, to a large extent, is dependent on getting costs down". He stressed, "We must make an extra effort to improve the cost relationships."

**ON VOODOO LINE**—From left: David S. Lewis, vice-president, Project Management, McDonnell Aircraft; Northrop's General Manager Robert R. Miller; C. Warren Drake, McDonnell vice-president, Manufacturing; and Bob Shafer, Northrop rep at McDonnell Aircraft in St. Louis, Missouri.

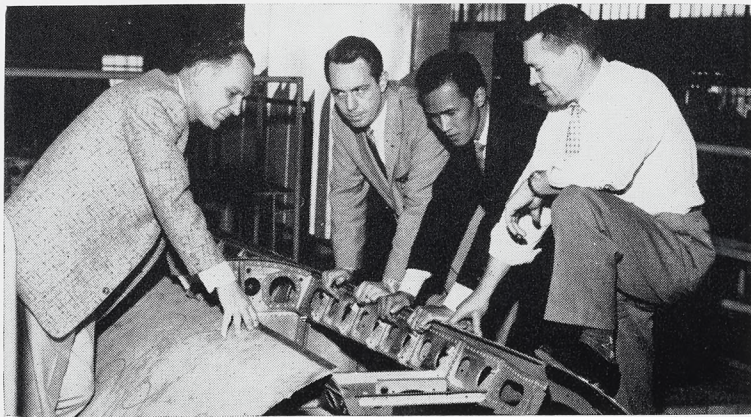
**TYPICAL** of the many Norcrafters assigned to the McDonnell projects is Lucille Goddard, here deburring F-101 fuselage side panel.



planning, tooling and actual machining of the items subject to first article buyoff. This was accomplished under the guidance of Northrop's quality control, engineering liaison, tool liaison and procurement representatives, stated Jack Hinchliffe, director, Material.

First step was to projectize the material program so that specialized skills could be best concentrated on getting a high quality (Continued on Page 3)

**AFT FUSELAGE ASSEMBLY** — On Plant Four assembly line: Earl Nickles, assistant superintendent, McDonnell Project; Chuck Williams, McDonnell rep at Northrop; Ben Quan, subcontracts man; and Jack McFall, department head, F-101. Work on Voodoo started in early 1955.



# Northrop News

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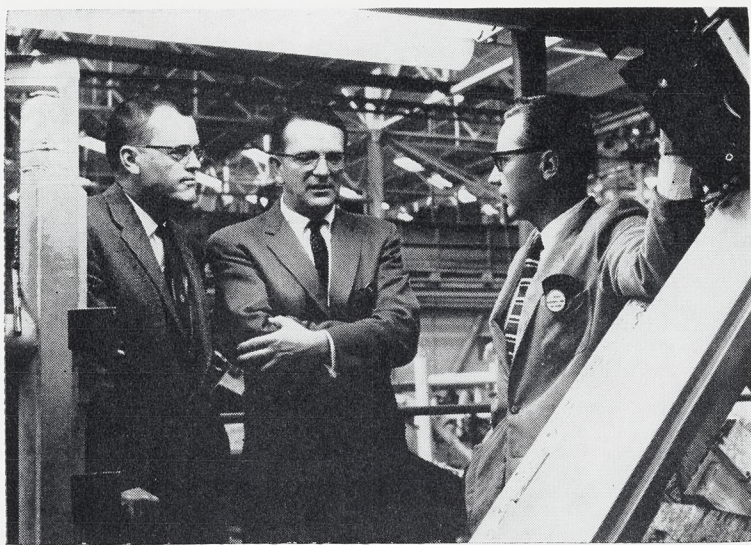
CHARLES BRADFORD, Editor

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**NORTHROP-McDONNELL** engineering team on F-4H— from left: John Wright, MAC; Harry Peterson, Northrop; Ray Bierman, MAC; Wes Steyer, Northrop; L. L. Kilmer, MAC; Al Powell, Northrop; Allan Lubin, MAC; and Art Webb, Northrop. Host of other engineers from both companies have contributed substantially to the F-4H project.



**WING ASSEMBLY JIG** frames shop conference between Richard R. Nolan, vice-president, Manufacturing, center; Arch Wallen, factory manager, left; and Clyde Rockey, chief McDonnell representative at Northrop. McDonnell work, important to Northrop, receives top attention.

(Continued from Page 2)  
job at lowest possible cost.

Vendors with the best capabilities were selected for the off-site manufacturing. Vendor contact representatives who were thoroughly familiar with manufacturing methods were assigned for constant surveillance of the vendors to assist in any problems. This made it possible to expedite through procurement liaison any changes issued by McDonnell.

Shop loading schedules are extremely important to the production schedules at Plant One. To assure on-time off-site progress, Materiel representatives maintain continuing liaison between Northrop and the vendors.

Representation on all phases of the McDonnell projects travels to and from Northrop as required

to maintain quality, schedules and costs, Bob Reed pointed out. "Our association with McDonnell is a 'round-the-clock' working relationship."

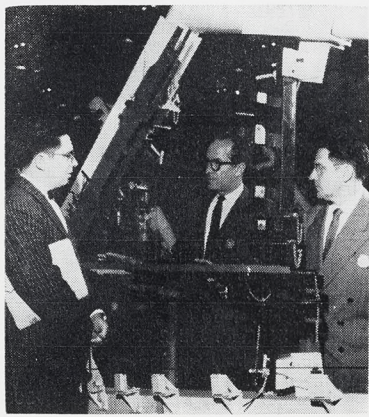
Among the McDonnell personnel assigned to the projects at Northrop are Bill Harmon, chief, Quality Control; Julian Kay, engineering rep; Chuck Williams, assistant chief representative, and Ray Bierman, head of the engineering design team.

These men, along with key McDonnell people in St. Louis are in close contact with every Northrop department connected with the program—Subcontracts, headed by Bob Reed; Fabrication under George West; plus many others. Extent of the Northrop effort is partially portrayed in accompanying photos.

**NORTHROP** director of Quality Control, Bob Catlin, right, checks quality status with Clarence McCrary, head of subcontract and receiving inspection. Northropers on McDonnell projects exert every effort to achieve highest standards.



**REVIEW**—Northrop tooling: Dick Sturgis, assistant chief tool designer, McDonnell; Jim Quick, Northrop tool project engineer; Art Hoffmann, senior tool planner, McDonnell. Production here at Northrop Field must dovetail with St. Louis line.



## Missile Survey Group Lauded

(Continued from Page 1)

At the conclusion of the mission J. B. Macauley, deputy assistant secretary, wrote Dr. Ballhaus, "You and your group have made a valuable contribution to our knowledge of the French missile capability and, as such, will assist us greatly in our endeavor to raise this capability from which both the French and the United States stand to gain. May I express to you and to the members of your group my deep appreciation for a job well done."

Lt. Gen T. B. Larkin, director, Mutual Weapons Development program, also extended his compliments. "The exceptional competence of each member of your team, your willingness to work long hours following an arduous schedule, and your frank and constructive discussions with the French insured an extremely successful visit. The report which you prepared was thorough, analytic and constructive. I am certain the evaluations contained therein will be of much assistance to the French as well as U. S. authorities. I should like also to compliment you and each member of your group on the cordial relations you established with both French government officials and representatives of French industry."

## Open House

(Continued from Page 1)

Cell, Environmental Test Building, Engineering Test Lab and Main Cafeteria. Plant Two will not be open.

Focal points of interest in the multi-million dollar science complex will be the design, analytical and project areas; test laboratory equipment; Hawk missile and T-38 mockups; Radioplane and Nortronics exhibits; and computing equipment.

Other areas to be viewed are the executive offices, executive conference room, and Main Cafeteria kitchens.

All parking areas will be open on a first-come first-served basis.

## Disability

(Continued from Page 1)

it advisable that they be handled by the State of California instead of through the Prudential Insurance Company of America.

The necessary forms for the filing of these benefits will be available in the Group Insurance Department, Personnel Activities, and other locations which will be announced later.

During the latter part of March, pamphlets explaining how and where to file for these benefits will be distributed.

## NEWS BRIEFS

(Continued from Page 1)

spelled out policy and responsibility of all functions pertaining to this activity.

Northrop's Development Planning will work in close coordination with corporate policy and planning guidance and will maintain a continuing analysis of all factors affecting our product environment. It will develop plans which will assure that the Division can take advantage of new and promising trends and avoid the effects of unfavorable trends.

Northrop's Development Planning will be located organizationally in Engineering, but it will be considered a Division-wide agency performing a function of general management.

Recommendations will be used to provide the general manager and his planning council with basis for making major program and policy decisions.

Some of the specifics required of Development Planning will be—preparation of the development plans, location of special and new business opportunities, establishment of a means to measure accomplishments, detection and interpretation of future developments and trends vital to the Division.

**DEI BOARD VISIT**—Following the recent Development Engineering Inspection Board on Snark ground support equipment, Air Force expressed sincere satisfaction at accomplishments during the three-day meeting. Stated Colonel D. A. Simcoe, Air Force Plant Resident Representative, "Both the Air Force and Northrop profited greatly by this meeting. It proved to be one of the best we have ever had. Attendance was kept at a minimum. Those attending were extremely well-qualified, capable of participation, and cognizant of the subjects at hand. The agenda reflected conscientious planning. Good organization was obvious."

**CAPTAIN VENEZIA TO BMO**—Captain Eugene Venezia, Northrop Air Force office, has been reassigned to Wright-Patterson Air Force Base where he will take up his new duties in the Ballistic Missile Office. Captain Venezia was assigned to Northrop over five years ago in the rank of second lieutenant. He served as Snark project officer for four years. "I enjoyed my tour of duty at Northrop," he stated. "I feel that I have made many friends here. It is a pleasure to have been associated with the Snark project, and to have been a part of such an outstanding accomplishment."

**DATICO**—Dr. William F. Ballhaus, Nortronics general manager, reports that recent DATICO presentation at Redstone Arsenal met with favorable reaction by Army Ordnance people. DATICO was demonstrated with Radioplane's OQ-19, with a Sergeant missile module, and with a Corporal missile component. The Redstone demonstration was three weeks in preparation. Equipment was flown to Huntsville from the Coast. DATICO is a device which automatizes weapon system checkout processes. It has inter-weapon system checkout capability. Its flexibility is demonstrated by its also having intra-weapon system checkout capability. This means that the same DATICO equipment is applicable to many different weapon systems and that, for any weapon system, it can also check total systems, subsystems, modules, and components. DATICO either will sharply reduce manpower requirements or will permit the same manpower to do many times the checkout work currently possible.

**PRACTICE BOMB AND ROCKET CARRIER**—Russ Bowditch, Associated Systems and Subcontracts, reports that the Northrop practice bomb and rocket carrier (see Northrop News—20 November 1957) is now at Eglin undergoing APGC tests. It is also slated to go to Patuxent, Maryland, for tests by the Naval Air Test Center.

## Collins on Caltech Board

(Continued from Page 1)

present campus on California street in 1910. Student body as of that time was 34 persons. Faculty numbered 12. Present student body numbers 1150 and the faculty has grown to 400.

Most graphic illustration of the Institute's growth is revealed by the fact that, although in 1908 yearly expenses were \$90,000, today this figure has grown to \$7,000,000.

The great 100-inch Palomar telescope is a product of Caltech engineering knowledge and genius. Also, and in the headlines today, the American Explorer satellite is a joint effort of the Institute and the United States government at the Jet Propulsion Laboratory, located above Devil's Gate Dam.

The board also includes three other Northrop officials, company board members: William C. McDuffie, chairman; Earle M. Jorgensen; John O'Melveny, guest speaker, is Cleveland NACA Section Head and currently studying at Caltech.

Both meetings will be held at the IAS Building, 7660 Beverly Boulevard, Los Angeles.

## IAS SCHEDULES MINTA LECTURE FOR NEXT WEEK

Forthcoming Institute of the Aeronautical Sciences meetings include the Third Annual Minta Martin Lecture on March 20 at 6 p.m. This special event honors the mother of Glenn L. Martin, pioneer pilot and aircraft designer-manufacturer.

The subject of the lecture is "Combustion—Aeronautical Science" and the speakers will be Professor Howard W. Emmons, MIT, and Jerome Clarke Hunsaker, professor of Aeronautical Engineering, also of MIT.

On the agenda for April 8 is a lecture on "Compressible Turbulent Boundary Layer with Heat Transfer". Mr. E. Reshotko,



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

HEARING AID, man's, Maico, fits in glasses. DA 9-5072. A  
CHEVROLET, 1952 convertible, Powerglide. AX 4-4768. A  
WATER HEATER, 20-gal gas, \$5. DA 4-4750. A  
SKIN DIVING EQUIPMENT, aqua lung, suit, gun, swim fins, accessories, \$175. OS 5-8951. A  
VACUUM CLEANER, Westinghouse upright, small, \$15. FR 4-4721. A  
RIFLE, Remington 550-1 .22 automatic, Weaver B4 telescopic sight, fleece-lined gun case, cleaning kit, \$50. FR 6-3265. A  
CHAIRS, 2 matched modern barrel back, light wood legs, raspberry color, \$25 ea. EA 2-2493. A  
LIGHT METER, Bewi, automatic exposure, German-made, \$15. FA 1-3601. A  
BOAT, 14' Fiberglass, oars, steering cable, life jacket, remote control, bait tank, extra prop, Mark 25 rebuilt engine, trailer, \$650. FR 6-5669. A  
CADILLAC, 1950 convertible, 1952 grille and bumpers, \$600. OR 2-3166. A  
BOAT, 8' dinghy, unpainted, \$49. FR 5-0606. A  
PICTURE, hand-painted spring scene, 36"x48" framed. OR 4-7644. A  
RANGE, Tappan gas, griddle, timer, clock, glass door, \$125. GE 1-0768. A  
PONTIAC, 1937 2-dr 6, \$50. CL 6-1981. A  
SKI EQUIPMENT, 6'9" solid hickory skis; Star safety bindings; single boots, size 9; aluminum poles; \$25. AX 3-8515. A  
HOUSE, 3-bdrm, w/w carpeting, fireplace, enclosed patio, double garage, fenced, landscaped, near Northrop, terms. FR 6-2504. A  
GOLF CLUBS, 4 Dave Sutherland D3's, Byron Nelson irons 2 to 9 & sand wedge; nylon bag & collapsible cart. FR 9-0554. A  
BABY EQUIPMENT, car bed, car seat, training seat, sterilizer, Nursemaid bottles & valves, \$12. AX 5-2375. A  
MOTORCYCLE, 1956 Triumph Tiger Cub, 200 cc, \$350. ME 3-3500. A  
MOVIE CAMERA, 8 mm Bell & Howell, companion case, yellow filter, \$40. RE 2-9259. A  
REFRIGERATOR, Coldspot, freezer top, \$85. FR 7-2983. A  
LUGGAGE CARRIER, cartop, \$2.50. OS 5-4736. A  
AUSTIN-HEALEY, 1956 100, \$2250. FA 8-2878. A  
CAMERA, 2 1/2x3 1/4 speed graphic, Optar 4.5 lens, focal plane shutter, electric shutter release, flash, case, extras, \$125. OS 6-8860. A  
CAMERA, 4x5 speed graphic, w/coupled range finder, extras, \$65. FA 8-2360. A  
RUG, 8x9 beige wool. WE 5-6824. A  
APPLIANCES, Sunbeam waffle iron; Sunbeam mixer; \$25. OR 1-3416. A  
PISTOL, .32 Beretta automatic, w/holder, \$35. FA 8-7739. A  
ACCORDION, Adriano 120 bass, 3 tone changes, red & white pearl, Samsonite case, cost \$450, \$199. DA 9-6774. A  
WATER SOFTENER, Rheem, \$225. OS 6-1471. A  
RECORDS, 78 rpm, 2 sets of over 75 classical records, \$10. GR 2-6621. A  
STUDEBAKER, 1950 Champion business coupe, overdrive, \$200. GR 3-5824. A  
CHEVROLET, 1946 sedan, 1953 3/4-race engine, new paint, \$100. DA 9-1019. A  
SPEAKER ENCLOSURE, Karlson, 3/4" Douglas Fir w/birch veneer; w/speaker, \$100; w/o speaker, \$75. FR 5-2756. A  
HOUSE, 3-bdrm, enclosed patio, beam ceiling, 4 yrs old, fenced, FHA, north Long Beach, \$11,750. NE 2-1509. A  
OLDSMOBILE, 1953 4-dr 98 sedan, power equipment, Hydramatic, autronic eye, \$775. DA 4-2956. A  
VOLVO, 1957 deluxe, equity for \$400. JA 7-9520. A  
MARINE ENGINE, Chrysler Royal, 140 hp; shaft; propeller; instrument panel; \$450. AX 2-3307. A  
RANGE, electric G.E., broiler, automatic controls, night light, 120V/240V 60 cps, \$85. Box 1201. A  
BUICK, 1949 4-dr Super, Dynaflo, one owner, \$300. NE 1-5941. A  
WASHER, Kenmore automatic, new motor, \$50. FR 2-7403. A  
CAMERA EQUIPMENT, Graflarger stand, \$10; Eastman microdol developer & replenisher; complete kit of chemicals for color film; print drier. GE 1-3731. A  
CLOTHING, women's suits and dresses, size 12; shoes, size 6 1/2 A; \$25. Box 1203. A  
HOT PLATE, 2-burner Kenmore, \$7.50. Box 1204. A  
BED, rollaway w/mattress, \$25. PL 6-2919. A

## FOR SALE

ROTISSERIE, G.E. deluxe, oven, guaranteed 1 yr, \$75. FA 1-3274. A  
WATCH, lady's Elgin, \$12.50. OS 5-5055. A  
TENT, 7x9 umbrella-type; sleeping bag; \$35. AX 3-0036. A  
TIRES & TUBES, 6.40x15, 6.00x16, \$3 per tire & tube. PL 4-4384. A  
RANGE, Wedgewood Deluxe 42", chrome top, griddle, oven window. FR 4-5935. A  
BOAT, 14' plywood, glass exterior, 7 1/2-hp engine, trailer, \$275. OS 6-3370. A  
HOUSE, 4-bdrm, 2 baths, w/w carpeting, fenced yard, disposal, patio, take car as part of down payment, \$14,900. TE 5-5701. A  
CHEVROLET, 1954 Deluxe delivery sedan, new two-tone paint, \$695. DA 9-7306. A  
POWER MOWER, Kraftsman reel-type, \$40. DA 4-7623. A  
MANIFOLD, Weiland dual, w/Rochester carbs & air cleaners, linkage to fit 1937-1955 Chevrolet 6, \$40. OR 2-3082. A  
FLUTE, Gretsch, silver, new pads, \$60. Box 1208. A  
PLYMOUTH, 1951 2-dr Concord, new paint & seat covers, \$295. FR 9-9616. A  
FORD, 1941 coupe, 1948 Merc engine, milled heads, duals, custom upholstery, new brakes, \$200. EX 8-0500. A  
MGA, 1957 roadster, all extras. EA 2-5295. A  
SUPERCHARGERS, for 1956 Cadillac, w/installation kit, \$150; instrument cluster, \$25; supercharger only, \$75. FR 2-1003. A  
FORD, 1949 2-dr custom sedan, \$350. OR 2-8302. A  
RENAULT, 1957 4CV, \$400 for equity & assume \$44 mo. payments. GE 1-3086. A  
ANTENNAE, 20-m beam, 3-element, w/rotator & control, \$40. FR 5-4271. A  
RADIO, Motorola, 3-way portable, w/batteries, \$25. FR 5-2756. A  
FURNITURE, table, 32"x48", limed oak, w/extra leaf & 6 chairs, \$50; headboards, 2 grey twin-size, \$5. FR 2-2631. A  
CLOTHING, women's size 16; coat, 3/4-length brown muskrat; coat, grey full-length station wagon-type, fully lined; collar, mouton. FR 9-8051. A  
FURNITURE, 2-pc davenport, \$85; rug & pad, \$55; end tables, \$25; coffee table, \$20; lamps, \$30; cost \$815, all for \$200. OS 5-9712. A  
FORD, 1957 4-dr Fairlane 500, power equipment, assume payments totaling \$2994.91. OS 6-0346. A  
TRAILER HITCH, U-Neek, for big house trailers, \$58. UN 8-2795. A  
CHEVROLET, 1948, \$100. FR 7-1478. A  
SHOTGUN, 12-gauge, double barrel. OS 6-6361. A  
SHOTGUN, Remington 16-gauge automatic; sheepskin case; cleaning tools; \$75. OS 5-7831. A  
FISHING OUTFIT, Wright-McGill, freshwater, \$50. RE 3-7872. A  
SLIDE MAGAZINES, 12 Arous, w/carrying case, \$15. FR 6-1147. A  
TRAILER, teardrop-type, sleeps 3, aluminum exterior, stove, ice box, 20-gal water tank w/hand pump, \$250. FR 6-5656. A  
HOUSE, 2-bdrm, GI resale, w/w carpeting, disposal, patio, fenced, near Rosecrans & Crenshaw, low down payment. DA 9-5474. A  
IRONER, Whirlpool deluxe console, \$100. OS 5-3235. A  
ELECTRONICS COURSE, home study, complete set, books & phonograph records, thru TV & radar, cost \$480, terms, \$125. Box 1210. A  
CHILDREN'S FURNITURE, youth bed, blonde, guard rail, mattress, \$35; crib, mattress, \$12; play pen, pad, \$12. RE 4-8822. A  
RADIO, Hallicrafter 3-way receiver, 4-band spread, w/vernier tuning, telescope & loop antenna, simulated leather case, \$50. PO 1-9269. A  
MARINE ENGINE, Chrysler Royal, 140 hp, 1 1/2 to 1 reduction, 1 1/4" shaft, instrument panel, extras, \$350. AX 2-3307. A  
RIFLE, Remington 22-cal semi-automatic, w/cleaning kit & dust cover, \$40. AX 4-9182. A  
CURTAINS, Dutch-type, white & brown, 8 pr; cafe-type, yellow & blue, 4 pr; \$2 pr. PL 3-8758. A  
REDUCING EQUIPMENT, Stauffer. OS 6-3708. A  
PONTIAC, 1950 6 sedanet, Hydramatic, \$200. FR 7-1480. A  
ENGINE, 1950 Ford, dismantled; needs ignition, carb & water pump; \$50. FR 9-4621. A  
BOAT, 13' Fiberglass, w/controls; boat trailer, 14' American, complete rig; \$325. OS 9-3984. A  
MERCURY, 1951 club coupe, Merc-O-Matic, overhauled engine, \$300. DA 9-1705. A

## FOR SALE

CRIB, drop sides, mattress, \$15. WE 6-6709. A  
TV SET, 21" Packard Bell console, \$125. FR 6-9224. A  
CHEVROLET, 1953 convertible, green, Powerglide, must sell. AX 4-4768. A  
COUCH, 2-pc sectional love seat, foam rubber, \$70. EX 8-4032. A  
ENCYCLOPEDIA, 1957 American Peoples, w/bookcase & complete set of hobbies & crafts encyclopedia. Box 1211. A  
LOT, 3/4-acre, Hesperia, 2 blocks from golf course, streets, utilities, terms, \$2500. OR 4-1098. A  
MANGLE, Horton, \$50. DA 9-2373. A  
RANGE, electric, 4-burner, \$40. FR 6-2371. A  
STUDEBAKER, 1953 V8 coupe, Hydramatic, \$550. DA 9-1838. A  
WASHER, Westinghouse L5, automatic, \$65. DA 3-0270. A  
BEDROOM SET, 5-pc blonde, w/box spring & mattress. WE 6-7078. A  
REFRIGERATOR, 1948 Philco 8 cu ft, \$50. DA 6-7726. A  
WASHER, Thor, semi-automatic, \$20. OS 5-0756 before 3 p.m. A  
CERAMICS, greenware and bisque. 10c to 25c ea; glaze in various colors. EA 2-4044. A  
LOT, Big Bear Lake, 78'x130', level, wooded, near ski lifts and snow area. OR 8-5307. A  
PONTIAC, 1955 2-dr Catalina, new tires, new brake linings, new spark plugs, new 3-yr guarantee battery, \$1385. DA 6-5471. A  
OLDSMOBILE, 1955 2-dr Super 88 Holiday, power equipment. DA 6-2567. A  
CABIN CRUISER, 19' Ladd, twin 25-hp Johnson engines, bait tank, \$1800. FR 5-0421. A  
BICYCLE, boy's 26" lightweight. PL 2-9597. A  
PUPPIES, Weimaraner, for field or show, parents AKC champions, Von Gaiberg line. FR 8-2703. A  
COFFEE TABLE, 50" distressed maple, \$25. PL 4-8903. A  
OUTBOARD, 1942 Johnson, 22.5 hp, recently overhauled, \$80. NE 5-4082. A  
ACCORDION, 120 bass, 3 switches, Italian import; case; music; \$100. FR 8-2662. A  
TV SET, Admiral 17" table model, \$40. PL 6-6363. A  
PLYMOUTH, 1957, consider 1952 or newer car as down payment w/balance of \$1700. OS 5-9488. A  
RANGE, O'Keefe & Merritt gas, chrome top, griddle, clock, timer, grillvator broiler, oven window, 1954-1955 model, \$125. VE 8-4207. A  
CAMERA, 2 1/2x3 1/4 speed graphic, Zeiss Tessar 3.5 lens; case; film holders; set of filters, sun & shade; film pack adapter; \$75. ME 0-5634. A  
CHEVROLET, 1956 Bel Air sport coupe, fully equipped, \$1700. OR 4-1255. A  
VOLKSWAGEN, 1956 hardtop, \$1485. HA 5-1846, days. A  
FORD, 1956 convertible, new top, \$2595. PL 4-1596. A  
SHOPSMITH, 1957, rollers, belt sander, band saw, lathe tools, dial dado wheel, saw & band saw blades. OS 5-2329. A  
ELECTRONIC EQUIPMENT, DX35 transmitter, variable frequency oscillator, Heathkit, \$50. Box 1207. A  
MOTORCYCLE, 1957 BSA, chrome fenders and tank, tachometer and speedometer, \$650. WE 3-0780. A  
AQUARIUM, 25-gal Pemco, top reflector with fluorescent lighting, wrought iron stand, high rate-of-flow filter, piston-type Oscar air pump, heater, thermometer, rocks, ornaments, \$50. NE 5-9676. A  
REFRIGERATOR, G.E. family size. Box 1206. A  
DAVENPORT, 3-pc sectional, green, \$175. DA 3-1479. A  
SHOTGUN, Mossberg .410-gauge, bolt action, \$20. FR 9-5061. A  
STENOTYPE, late model; instruction course, record player w/adaptor, 4 LP dictation records at 60-90 wpm, \$65. DU 8-6834. A  
HOUSE, 2-bdrm, beam ceilings, patio, double fireplace, double garage, built-in appliances, near South Bay shopping center, 19 mo. old, FHA, \$16,500. FR 2-9653. A  
BIKE, 26" boy's, balloon tires, \$20. FR 6-1395. A  
RIFLE, Winchester .22 semi-automatic, 4-power Weaver scope, \$45. AX 2-8237. A  
RANGE, Florence gas, 4-burner oven & broiler, 2 storage drawers, \$35. OL 6-0753. A  
ROCKER ARMS, set Thomas high-lift, fits 1950-1954 Cadillac, cost \$40. DA 4-8853. A  
HOUSEHOLD FURNISHINGS, 2 matching mahogany step tables, \$12.50 ea; round piecrust table, \$9; frieze occasional chair; travel steam iron; chenille bedspreads. OR 4-2623. A  
DOG, dachshund, female, black, 8 mo. old, AKC, housebroken, all shots, \$50. OS 5-4994. A  
VACUUM CLEANER, Hamilton Beach tank-type, \$20. DU 4-4017. A  
FORD, 1953 2-dr, overdrive, \$550. PL 6-3245. A  
MOTORCYCLE, 1957 N.S.U., 125 cc, \$295. DA 3-7459. A  
ORGAN, Hammond, spinet M2, \$1050. PL 4-0739. A  
RANGE, O'Keefe & Merritt, glass-door oven, grillvator broiler, \$75. FR 5-0813. A

# San Clemente Golf Meet To be Repeated by NRC

Plans for twilight golf leagues and future tournaments are on the program for a special meeting of Norcrafter golfers slated March 24, 7:30 p.m., at the NRC Clubhouse.

Popular San Clemente tournament will be repeated again this year. Date set is April 13 with tee time at 10 a.m. Only twenty foursomes will be able to participate and early entry is suggested. Forms are available now at Personnel Activities. Entry

deadline is March 31. Entry fee of \$3.00 includes \$2.50 green fee and 50 cents prize fund.

Twilight leagues entry forms are available now at Personnel Activities, also. Entry deadline is April 15.

Schedule of leagues at Western Avenue Country Club is Monday through Thursday at 4 and 5 p.m., and Fridays at 5 p.m. Leagues at Alondra will play Wednesday at 4 p.m. and Thursdays at 4 and 5 p.m.

## FOR SALE

ELECTRONIC EQUIPMENT, Precision ES-200C signal generator; Heathkit TS-3 sweep generator; Heathkit O-6 scope; RCA isolation xformer; TV & radio circuit books; tubes, resistors, capacitors; supplies for repair business. TH 6-5589. A  
ENGINE, Crosley, w/marine conversion. FR 4-2190. A  
HOUSE, 3-bdrm, w/w carpeting, landscaped, fenced yard, north Torrance. DA 3-0679. A  
DOG, Great Dane, AKC, fawn ears, all shots, housebroken, trained, gentle, 5 mo. old. FR 6-9567. A  
TRUCK, 1951 Studebaker pickup, large engine, 1958 license, \$325. OR 7-8851. A  
REFRIGERATOR, 9' Coldspot, freezer top, \$65. PL 5-1324. A  
AQUA LUNG, 2-stage regulator, 1-hr tank w/reserve. FR 4-4484. A  
SINK, large service room-type, built-in cabinet, formica top, \$15. FR 5-8536. A  
LOVE SEATS, 2 contemporary, \$30 ea. OX 8-2057. A  
RIFLE, .22 semi-automatic, removable 4-power scope, multiple target peepsights, sling, \$30. FR 5-8804. A  
TRAILER, 2-wheel box-type, 600x16 tires, \$38. PL 5-2412. A  
SKI BOAT, 1957 Aristocrat Typhoon 12, fully equipped; 1957 Evinrude 30 electric battery charger; custom-built trailer, 15' wheels. ED 7-5174. A

## WANTED TO BUY

SHOTGUN, .410, any make. Box 1205. B  
CHEST OF DRAWERS, TE 5-9472. B  
CAR PARTS, 1932 Ford radiator shell, front fenders. FR 6-3265. B  
SCINTILLATOR, Precision Instrument Model IIIA or better. FR 5-7810. B  
OFFICE CHAIR, leather-covered, posture. HO 4-7747. B  
HOUSE TRAILER, 15' to 18' late model. OS 6-0496. B

## FOR TRADE

TRAILER HOUSE, 1954 eastern-built, 35', trade for R-zone lot in this area. OS 6-9086. C  
SUPERCHARGER, complete for installation on 1956 Thunderbird, trade for Mercury Mark 30 or 55 outboard engine. FR 4-2915. C  
SPINET, Gulbransen, trade for grand piano. EX 3-6339. C  
AIR CONDITIONER, car, cost \$500, trade for spinet. EA 2-1885. C  
HOUSE, 3-bdrm, in West Covina, trade for house in Inglewood or beach area. ED 8-4064. C  
BIRDS, cockatiels, 6; parakeets, 70; cages & equipment; trade for chest-type deep freezer. OR 1-1660. C  
PAINTING, house or auto, trade for ? FR 6-3524. C

## RENTALS OFFERED

APARTMENTS, 1-bdrm, furnished, \$75; unfurnished, \$65. OS 6-9086. E  
ROOM AND BOARD, twin beds, lunches packed, near buses, \$20 wk. OR 7-2618. E  
APARTMENTS, 1-bdrm, modern. DA 4-8569. E  
ROOM, adjoining bath, day-working men only, near Northrop, \$10 wk. OS 6-0326. E  
ROOM, adjoining bath, men only, near Northrop, \$8 wk. PL 4-7243. E  
APARTMENT, 2-bdrm, unfurnished, private patio, fenced landscaped yard, garbage disposal, near schools & Northrop, \$100 mo. EA 2-1885. E  
APARTMENTS, furnished, near shopping center & buses, utilities paid; single, \$59.50 mo; double, \$74.50 mo. FR 4-8792. E  
HOUSE, 2-bdrm, stucco, near school, shopping areas & Northrop, \$90 mo. OS 6-0033. E  
HOUSE, small, furnished, near Crenshaw & Compton, men only, utilities paid, \$45 mo. DA 9-1488. E  
APARTMENT, 2-bdrm, disposal, aarage, laundry room, near Northrop, no children or pets, \$75. OR 1-3714. E  
APARTMENT, 1-bdrm, TV jack, disposal, aarage, \$60 mo. NE 2-0590. E  
HOUSE, 3-bdrm, aarage, aarbage disposal, near schools & Northrop, no dogs, water paid, \$105 mo. OS 5-9303. E

## RENTALS OFFERED

APARTMENTS, 2-bdrm, modern, near Northrop, \$85 mo. OS 6-2649. E  
SHARE HOME, Westchester, desire cultured person. OR 2-4813. E  
ROOM, large furnished airy, adjoining bath, private entrance, light cooking, large wardrobe closet, employed lady, \$35 mo. PL 5-2140. E  
APARTMENT, bachelor, off-street parking, \$45 mo. OS 5-7284. E  
APARTMENT, 4-rm, unfurnished, large, near Northrop, children welcome, \$65 mo. PL 6-6177. E  
APARTMENT, 1-bdrm, \$65 mo. FR 6-3265. E  
ROOM, men only, private entrance, off-street parking, share bath, near Northrop, \$30 mo. Box 1203. E  
APARTMENTS, 1-bdrm, new, unfurnished, disposal, TV jacks, off-street parking, near South Bay shopping center, \$70 mo. Box 1201. E  
APARTMENT, 2-bdrm, w/w carpeting, garage. Box 1202. E  
ROOMS, men only, \$8 wk. OS 6-0496. E  
ROOM, kitchen privileges, \$9 wk. OR 2-5647. E  
APARTMENT, bachelor, furnished, Manchester-Vermont area, water paid, \$60 mo. PL 9-6332. E  
APARTMENT, 2-bdrm, unfurnished, near Northrop, \$100 mo. OR 7-4021. E  
APARTMENT, 2-rm bachelor, furnished, private bath, utilities paid. OS 6-5484. E

## RENTALS WANTED

HOUSE, 3-bdrm, fenced back yard, need April 15, to \$125. FR 6-3297. F  
HOUSE, 2-bdrm, unfurnished, Inglewood or Hawthorne areas, young couple & infant, approx. \$100 mo. OR 2-6518. F

## CHILD CARE OFFERED

CHILD CARE, days, any ages, hot meals, naps, fenced yard, references, licensed, south Torrance. DA 6-3282. G  
CHILD CARE, ages 2 through 5, week-days, hot lunches, snacks, naps, fenced yard, licensed. OS 6-1853. G  
CHILD CARE, licensed, fenced yard, hot breakfast & lunch, near Northrop. OS 5-7088. G

## PERSONALS

REUNION, Fremont High School Class of 1938, 17 May 1958. OR 8-8810. L  
THANK YOU to Northrop Blood Bank and to NRC for blood donated during my father's recent illness; also, for the flowers and other kindnesses extended upon his death.—MYRON W. PECK. L

## FOR SALE OR TRADE

THUNDERBIRD, 1955, sell or trade equity. JA 9-3413. M  
CAMERA, German Noviflex, single lens reflex, focal plane shutter to 0.001 sec, 2.9 Meyer Goerletz lens, \$55 or trade for speed graphic camera w/film roll-back. FR 4-4721. M  
CHEVROLET, 1957 2-dr, underseal, FR 4-5870. M  
ENCYCLOPEDIA, American Educator, 10-volume set, cost \$200, \$85 or will trade for Delta band saw or power lawn edger. FR 9-7471. M  
JAGUAR, 1952, sell or trade for late model sedan or station wagon. FR 9-3128. M  
MERCURY, 1956, stick shift, overdrive, \$200 for equity & assume \$76.98 mo. payments or trade for 1953-1954 car. OR 7-8851. M  
RIFLE, Savage, .22. EX 3-9076. M  
FORD, 1957 Fairlane 500 Victoria, stick shift, big engine, \$350 for equity or trade for late car. Box 1209. M

**SHARE  
THE  
RIDE**





**RIDES WANTED**

7:00 a.m. — 3:45 p.m.

(Zone 3)  
PUENTE & SAN BERNARDINO FRWY, West Covina. (Car pool desired.) GEORGE PRESLEY (5563-23002, Ext. 2011). ED 8-4064. 2-3  
FOOTHILL & SANTA ANITA, Arcadia. (Car pool desired.) C. T. ADAMS (5163-55286, Ext. 2071). EL 8-5567. 2-3

(Zone 4)  
VERMONT & 109th ST., Los Angeles. GENARO CHAPA (5512-44757, Ext. 2568). 2-4

(Zone 5)  
ORANGETHORPE & BROOKHURST, Fullerton. (Need 3 cars in present car pool.) BILL JAMES (5411-16932, Ext. 2186). LA 5-9540. 2-5  
LA PALMA & KNOTT, Buena Park. ROBERT GELLER (5353-53839, Ext. 2347). LA 2-7676. 2-5

(Zone 9)  
HAWTHORNE OR CRENSHAW & PACIFIC COAST HWY, Torrance. T. DEEDS (5234-26422, Ext. 2466). 2-9

(Zone 12)  
PICO & 21st ST., Santa Monica. (Via Pico, Lincoln, Hwy 101, Imperial.) STAN KAMHOLTZ (5221-54891, Ext. 2203). EX 3-9076. 2-12

(Zone 14)  
MAGNOLIA & LAUREL CANYON, North Hollywood. M. TOOLE (5232-53682, Ext. 2171). PO 1-9269. 2-14

7:30 a.m. — 4:15 p.m.

(Zone 1)  
FOOTHILL & OCEANVIEW, La Crescenta. (Via La Crescenta, La Canada, Flintridge, Linda Vista Ave.), Highland Park (Avenue 64), Pasadena Frwy; car pool desired.) JOHN H. MORECROFT (2871-29972, Ext. 734). CH 9-6418. 3-1  
MANCHESTER & CRENSHAW, Inglewood. (Can take 3 riders.) CHARLOTTE WOOL-UMS (9514-27690, Ext. 2151). PL 3-7484. 3-1

(Zone 4)  
IMPERIAL & GARFIELD, Hollywood. (Am blind & need ride very much; have lot pass.) DAN KRUCKEBERG (2520-20800, Ext. 1231). NE 6-9043. 3-4

(Zone 5)  
PALO VERDE & CARSON, Long Beach. (Car pool desired.) KARLA DIXON (9542-51034, Ext. 2228). HA 9-7732. 3-5

(Zone 9)  
HAWTHORNE OR CRENSHAW & PACIFIC COAST HWY, Torrance. T. DEEDS (5234-26422, Ext. 2466). 3-9

HAWTHORNE & 154th ST., Lawndale. DOROTHY STADELWEISER (8910-54858, Ext. 1720). OS 5-2282. 3-9

(Zone 14)  
PRAIRIE OR MARKET & MANCHESTER, Inglewood. HELEN SCHECK (5148-54925, Ext. 1344). OR 1-6581. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 3)  
CITRUS & SAN BERNARDINO FRWY, Covina. (Need additional driver-riders for existing car pool; have parking pass.) CLINT COMERFORD (3146-54846, Ext. 1391). ED 9-7033. 5-3

(Zone 8)  
ARLINGTON & SEPULVEDA, Torrance. K. RIDER (3411-47205, Ext. 1866). FA 8-7642. 5-8

(Zone 13)  
SHERMAN WAY & WINNETKA, Canoga Park. (Need 1 or 2 for established car pool; have lot pass.) CHARLES O. KRAMER (3120-49312, Ext. 565). DI 8-2096. 5-13

(Zone 14)  
HIGHLAND & SUNSET, Hollywood. (Will meet anywhere in Hollywood.) GENE MATHOT (3620-44943, Ext. 1506). HO 4-3386. 5-14

3:45 p.m. — 12:15 a.m.

(Zone 4)  
IMPERIAL & GARFIELD, Hollywood. (Am blind & need ride very much; have lot pass.) DAN KRUCKEBERG (2520-20800, Ext. 1231). NE 6-9043. 6-4

4:45 p.m. — 1:15 a.m.

(Zone 4)  
IMPERIAL & GARFIELD, Hollywood. (Am blind & need ride very much; have lot pass.) DAN KRUCKEBERG (2520-20800, Ext. 1231). NE 6-9043. 8-4

**Miscellaneous — Split Shift**

(Zone 3)  
VERMONT & 93rd ST., Los Angeles. (Hours: 7:15 a.m.—4 p.m.) IRENE DASHLEY (5340-33732, Ext. 3536). PL 4-1215. 10-5

(Zone 5)  
LONG BEACH & OLIVE, Compton. (Hours: 4:15 p.m.—12:45 a.m.) BEATRICE A. RANSON (2553-24014, Ext. 2600). NE 2-5457. 10-5

(Zone 9)  
HAWTHORNE & 168th ST., Lawndale. (Hours: 4:15 p.m.—12:45 a.m.) RUTH DE WITT (6270-25516, Ext. 496). FR 4-0363. 10-9  
TORRANCE BLVD. & PALOS VERDES DR., Torrance. (Hours: 4:15 p.m.—12:45 a.m.) COLENE BUZZARD (6270-25509, Ext. 1683). FR 2-5955. 10-9

**RIDES OFFERED**

7:00 a.m. — 3:45 p.m.

(Zone 3)  
PUENTE & SAN BERNARDINO FRWY, West Covina. (Car pool desired.) GEORGE PRESLEY (5563-23002, Ext. 2011). ED 8-4064. 12-3

(Zone 4)  
PARAMOUNT & IMPERIAL, Downey. H. A. THOMAS (5234-54343, Ext. 781). TO 9-7275. 12-4

(Zone 5)  
ORANGETHORPE & BROOKHURST, Fullerton. (Need 3 cars in present car pool.) BILL JAMES (5411-16932, Ext. 2186). LA 5-9540. 12-5  
COMMONWEALTH & NICHOLAS, Fullerton. AL GOODMAN (5449-17337, Ext. 1366). LA 6-4520. 12-5

(Zone 12)  
PICO & 21st ST., Santa Monica. (Via Pico, Lincoln, Hwy 101, Imperial.) STAN KAMHOLTZ (5221-54891, Ext. 2203). EX 3-9076. 12-12

(Zone 14)  
MAGNOLIA & LAUREL CANYON, North Hollywood. M. TOOLE (5232-53682, Ext. 2171). PO 1-9269. 12-14  
CRENSHAW & OLYMPIC, Los Angeles. HELEN AARON (5352-49562, Ext. 1508). RE 1-7492. 12-14

7:30 a.m. — 4:15 p.m.

(Zone 1)  
FOOTHILL & OCEANVIEW, La Crescenta. (Via La Crescenta, La Canada, Flintridge, Linda Vista Ave.), Highland Park (Avenue 64), Pasadena Frwy; car pool desired.) JOHN H. MORECROFT (2871-29972, Ext. 734). CH 9-6418. 13-1  
MANCHESTER & CRENSHAW, Inglewood. (Can take 3 riders.) CHARLOTTE WOOL-UMS (9514-27690, Ext. 2151). PL 3-7484. 13-1

(Zone 5)  
PALO VERDE & CARSON, Long Beach. (Car pool desired.) KARLA DIXON (9542-51034, Ext. 2228). HA 9-7732. 13-5

8:00 a.m. — 4:45 p.m.

(Zone 3)  
CITRUS & SAN BERNARDINO FRWY, Covina. (Need additional driver-riders for existing car pool; have parking pass.) CLINT COMERFORD (3146-54846, Ext. 1391). ED 9-7033. 15-3

(Zone 4)  
IMPERIAL & VERMONT, Los Angeles. (Car pool desired.) CAROL WELLS (3733-37964, Ext. 1292). 15-4

(Zone 10)  
MANHATTAN AVE. & 6th ST., Hermosa Beach. (Need 2 passengers.) JOAN CLARK (8910-14456, Ext. 1296). 15-10

(Zone 13)  
SHERMAN WAY & WINNETKA, Canoga Park. (Need 1 or 2 for established car pool; have lot pass.) CHARLES O. KRAMER (3120-49312, Ext. 565). DI 8-2096. 15-13

**Miscellaneous — Split Shift**

(Zone 3)  
VERMONT & 93rd ST., Los Angeles. (Hours: 7:15 a.m.—4 p.m.) IRENE DASHLEY (5340-33732, Ext. 3536). PL 4-1215. 20-3

(Zone 5)  
ORANGETHORPE & HWY 39, Buena Park. (Hours: 4:15 p.m.—12:45 a.m. Via Artesia; car pool desired.) LYNN PEW (2520-24664, Ext. 2612). 20-5

# **NRC Bowlers Like Spring Alley Sched**

Interest in the annual Spring Doubles Tournament is running high among Northrop bowlers. Event is slated for the weekends of April 12 and 13, 19 and 20, and 26 and 27. All contests will be rolled at Windsor Bowl.

Entry deadline for all events is March 17. All Norcrafters, members of their families, USAF and resident subcontract personnel are eligible to compete.

Trophies will be awarded to top winners of class A and B categories in the following events: men's doubles, women's doubles, mixed doubles, and husband and wife doubles.

There will be awards in the men's scratch singles, and special

## **Paul Lauritz To Chairman NRC Art Show**

Judges for the eleventh annual NRC Purchase Prize Art Show have been named. Chairman of the panel of judges is Paul Lauritz, famed American marine and landscape artist.

Mr. Lauritz announced that Walter Seely, proprietor of the Seely Galleries in Hollywood and president of the California Art Association has accepted an invitation to assist in the judging.

Also named as third judge is Donald C. Green of the Art Department at El Camino College. All three leading artists will select top winners in two categories of competition in the art show.

A special sweepstakes award for best print in the show will be made on the basis of balloting by all visitors who view the exhibits. This is in addition to the cash purchase prizes. See Northrop News, February 12 and 26, for details.

A change in showing schedules has been announced. First display of all entries will be at the Plant One Cafeteria from March 24. This change was made in order to allow cafeteria visitors during the Engineering Center Open House an opportunity to view the paintings.

Following the Plant One showing, the paintings will be exhibited at the Plant Three Cafeteria beginning April 7. A public showing will be held at the NRC Clubhouse in April.

All Norcrafters, members of their families, are invited to submit entries no later than March 20.

Cash prizes of \$100 and \$75 are posted for winners in the amateur category, and \$150 and \$100 for the semi-professional and professional category.

## **NRC Campers Plan Outing**

First NRC Camping Club outing will be held Saturday, March 22, it was announced by Fred Brant, acting commissioner. Scene will be O'Neil Park, east of El Toro near Trabuco Canyon.

Outing starts off with breakfast from 7:30 to 9:30 a.m. Charge for breakfast is 50 cents. Campsites will be available for those members who wish to camp overnight.

Maps indicating route to O'Neil Park are available at Personnel Activities. Norcrafters planning to attend should make early reservations through the Camping Club or Personnel Activities.

## **NRC CAMERA CLUB TO SHOW TOP PIX**

An opportunity to view the top photographs taken by NRC Camera Club members will be afforded all Norcrafters Wednesday, March 19. This is the date for the annual salon at the NRC Clubhouse. Time of the showing is 7:30 p.m.

Trophies for men's hi-scratch series and men's hi-scratch game. Women bowlers will be eligible for similar trophies.

Complete details on all events, schedules and entry forms are available from Personnel Activities office, all plants.

## **Nor-Aid Reports \$18,323 Grant Funds Last Quarter**

Nor-Aid, the in-plant "helping hand" program, provided \$18,323.92 in grants to 86 applicants requesting assistance during the fiscal year second quarter, it was reported by George Forbes, Nor-Aid Treasurer.

During the period of November, December and January, Nor-Aid allocations amounted to \$1,194.94. This brought the total of available funds to \$43,778.03. Funds on hand as of January 31 were reported at \$25,454.11 following the three months' disbursement to Norcrafters.

Reporting the financial status of Nor-Aid, Forbes stated that a bulk of the assistance was provided to Hawthorne Norcrafters.

## **BRUSTER TOPS IN ARCHERY MEET, RANDOLF NEXT**

Results of the night shift Archery Club field shoot list Bill Bruster in first place with Paul Randolph in second, it was reported by Mickey Mechling, acting commissioner.

The tournament shoot was held at Rosecrans Park, February 23. First place team honors went to Paul Randolph, E. R. Nealy, Robert Trumble, and honorary member Dale Warren.

High shooters of the individual teams were Mickey Mechling, Bill Bruster, Paul Randolph and Harold Fear. A shoot-off between these four archers decided the top winners.

Regular meetings of the night shift Archery Club are held every Wednesday afternoon at 12:30 p.m. in the NRC Clubhouse. An invitation to all interested Norcrafters is extended by the group. Contact Personnel Activities for additional details.

## **NRC CHESS CLUB PLAYS MARCH 19**

A Plant One chess tournament will get underway next Wednesday, March 19. It will be a two-game "sudden death" elimination tourney and all interested Plant One Norcrafters are invited to compete. Contact Personnel Activities, extension 2784, for information.

Breakdown was as follows.

Anaheim, \$619.20; Edwards, \$434.00; Florida, \$300.00; LAX, \$429.44; Palmdale, \$400.00; and Hawthorne, \$16,141.28.

Norcrafters can designate contributions to Nor-Aid on a special form available through department clerks or at Personnel Activities offices. Contributions may be made through weekly payroll deductions.

## **Walt Brown T-M Club's New Prexy**

A new slate of officers has been elected by Northrop Toastmaster Club 2583. New president voted to office is Walt Brown.

Others elected at the March 4 meeting are Walt Gray, educational vice-president; Dick Young, administrative vice-president; Jim Arndt, secretary; Rudy Pummer, treasurer; John Musulin, publicity; and Ted Kelly, sergeant at arms.

Outgoing president of the club is Howard Cornelius.

Toastmasters 2583 meets each Thursday evening, 6:15 p.m., at Kim's Restaurant. Invitation is extended to interested day shift Norcrafters to participate in the Club's activities.

## **TT PADDLE FEST ONE WEEK TO GO ENTRIES—PA&S**

Norcrafters men and women of all shifts are invited to participate in the NRC Table Tennis Tournament now underway—Saturday, March 8, and Saturday, March 29. Games will be played at the NRC Clubhouse from 9 a.m. to 5:30 p.m.

The tournament will be a double elimination event with the best two out of three games deciding the winner of each match. Singles and doubles events are scheduled for the men and singles events for the ladies.

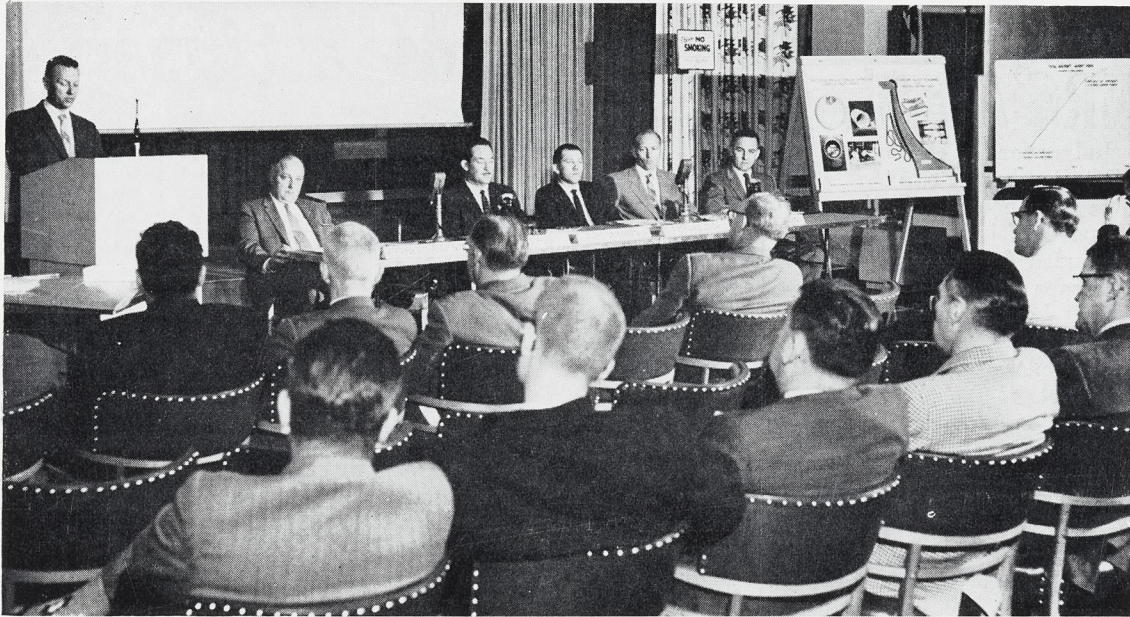
Entry forms are available at Personnel Activities, Plant One.



**WHOOPEEE LUNCH!**



## Panel on New Manufacturing Methods

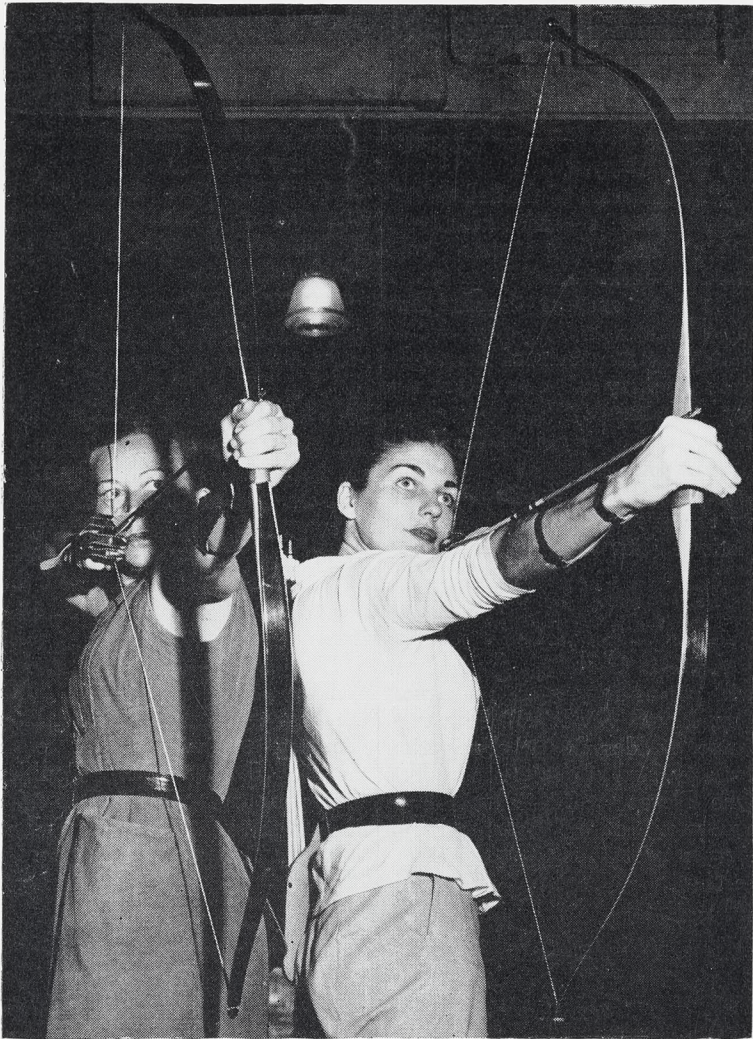


**RESEARCH IN MANUFACTURING**—February meeting of the SAE featured all-Northrop panel presentation on manufacturing research and development. Speakers were, from left, Doug Hugill on tape-controlled riveting, special tooling, and hot forming of exotic materials; Barney Gaiennie, Northrop's chief of Manufacturing R&D, panel leader; Paul Warren on bonding honeycomb and related processes; Dick Cude on plastic parts and tooling; and George Larsen on chem-milling and forming. John Hendel served as panel recorder. The panel members illustrated the growing importance of manufacturing R&D. Hap Herdrich, Northrop Snark program coordinator, is vice-chairman of the SAE production activity. (See Northrop News, January 29, 1958).

## For Community Services



**RED CROSS** honor for Norcrafters—Bowen McCoy, manager of Los Angeles Red Cross Chapter, presents award for "outstanding support of Red Cross Blood Service in 1957". John B. Clark, director, Industrial Relations, right, accepts in behalf of all Norcrafters who unselfishly gave. Plants donated over 1000 pints of blood during 1957. Norcrafter blood bank is for the use of all personnel and their families. Call Personnel Activities for complete information. In case of emergency, call Protection Services.



## Northrop News Pictorial

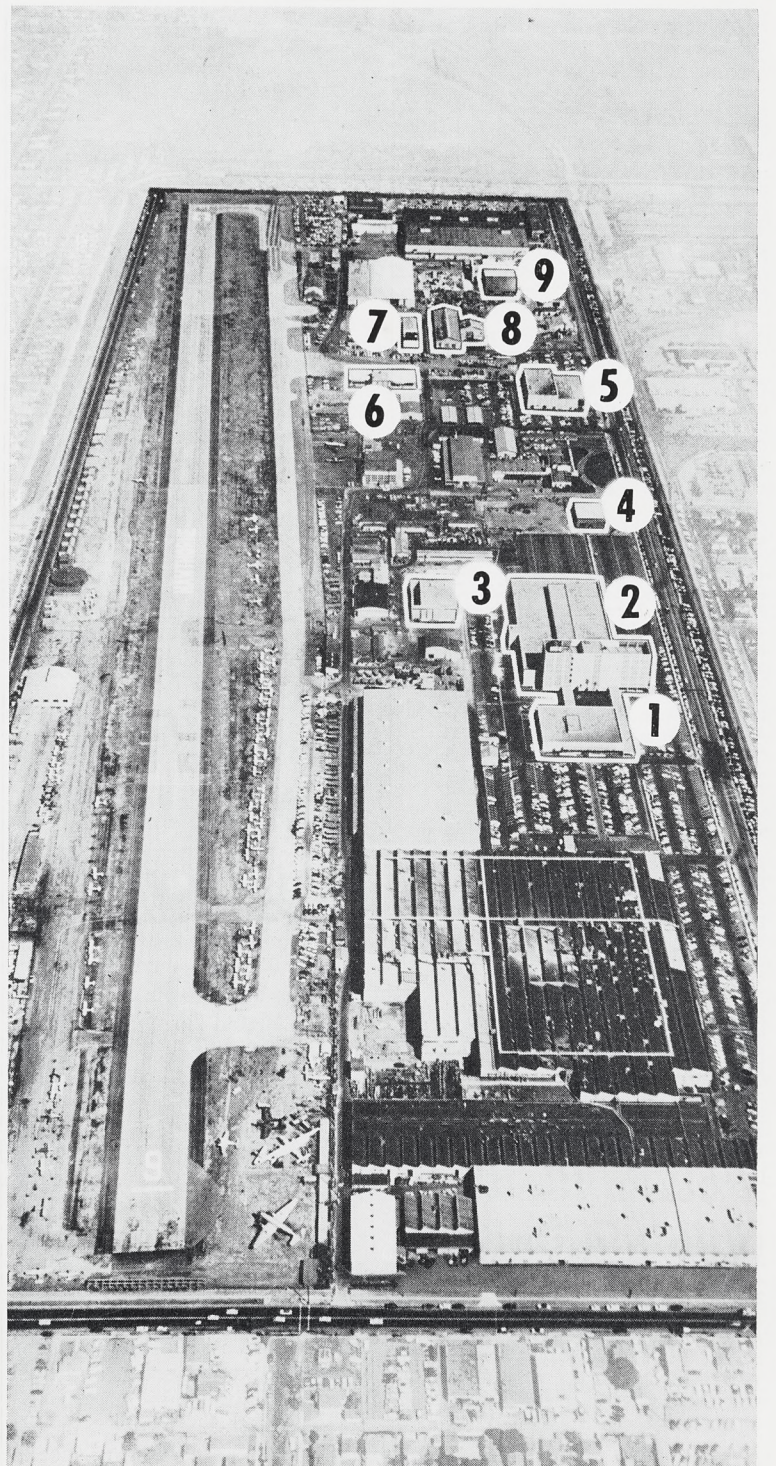
**ARCHERY CLUB**—With eyes on the target, archers E. J. Coffey and Mikki Vance show trophy winning form.

Below, NRC Archery Club marksmen, all winners in recent trophy shoot. From left, 1st row, Bernie McDonauld, Bob Coffey, Jo Williams; 2nd row, Frank Jeffers, Mikki Vance; back row, Herb Chan, E. J. Coffey, Wes Williams. Bow aces.



## Engineering Open House

**OPEN HOUSE SKYVIEW** — Aerial photo of Northrop Field shows new Engineering science center, focus of upcoming Open House. (1 & 2) engineering center, (3) tank sealing building, (4) product display building, (5) engineering test lab, (6) wind tunnel, (7) engine test cell, (8) environmental test building, and (9) missile preflight, countdown facility. Open House visitors may tour all of these sites except the tank sealing building and the missile preflight and countdown facility. (See story on Page 1.)





**SUPERSONIC N-156F**—First photo of the Northrop N-156F mockup. Now under development, this quick reaction defensive fighter, capable of being zero-launched or operated from short, unimproved runways, is designed specifically to meet the military requirements of SEATO and NATO nations. The N-156F combines versatile firepower with minimum maintenance cost and extremely high performance characteristics. Mockup, right, emphasizes the sleek lines, short wing span and "area rule" fuselage design of the supersonic fighter, capable of duplicating the performance of century series aircraft at less than one-half the weight. Range will be 2000 miles.

## NORTHROP

# NEWS BRIEFS

**RETURN FROM AUSTRALIA**—General Manager Miller returned from Australia Friday of last week. Visits to Australian government and military centers — Melbourne, Sydney and Canberra—were made together with Gil Nettleton, vice-president and general manager, Northrop International Division; Mike Creamer, chief, Manufacturing Program Planning, Northrop Division; and A. M. Ogness, Preliminary Design supervisor, Northrop Division. Visit was in the interests of Northrop International Division's development plans. Mr. Nettleton and Irving Roth, assistant to President Collins, are now in Japan for Northrop International.

**THE AIR FORCE OFFICE**—Colonel D. A. Simcoe announces that, effective 1 February, Max Pellerin has been transferred from the Radioplane AFPR office to this office. Mr. Pellerin has been assigned the duties of Air Force contracting officer, the same position that he held at Radioplane. He replaces R. J. Knight, now on sick leave in the state of Utah. Mr. Pellerin is presently at Wright Field for follow-on SM-62 R&D negotiations.

**THE N-156F**—The Northrop Corporation has made company funds available for tooling and engineering go-ahead on the N-156F, it has been announced by Whitley C. Collins, president. First photo of the mockup airplane is published in this issue of the Northrop News. The N-156F is a counterair fighter designed for foreign markets. A design capability is its spectacular zero launch.

**NORTRONICS**—Dr. W. F. Ballhaus, vice-president and general manager, Nortronics, went to Lockheed's Missile Systems Division at Sunnyvale, and to Boeing's Aircraft Division and Pilotless Aircraft Division, Seattle, last week. Visit was to discuss Nortronics' electronics, guidance and ground support capabilities. Both companies were impressed by DATICO possibilities for automation of systems checkout for Bomarc (Boeing) and Polaris (Lockheed).

**BOEING BUSINESS**—Al Morgan, vice-president, Contracts, reports that Boeing has requested cost information on additional wing and aft fuselage units for the KC-135 Air Force jet tanker.

**LONG RANGE PLANNING**—Northrop Division has placed strong emphasis on participation in the joint ARDC-industry planning efforts which will result in benefits to the Air Force, industry, and Northrop, it has been revealed by George Douglas, vice-president, Engineering. This effort allows Northrop to work on projects for which we have a specific capability. It will cover weapon systems with an operational capability for the immediate future as well as 15 to 20 years hence. Scope of the work will be from elemental phases to complete weapon systems concepts. In practice, Northrop Weapon System Development Engineering—Welko Gasich, chief—will scan air defense, strategic, tactical and logistic needs, offer assistance on those projects most suited and, if sanctioned by the military, will process initial evaluation through the newly formed Product Planning organization under the supervision (See NEWS BRIEFS, Page 2.)

## F-89 Safety Record

Mr. R. R. Miller  
Vice-president and General Manager  
Northrop Division  
Dear Mr. Miller:

This letter is to express my sincere appreciation for the fine support Northrop Aircraft, Inc., has given the Air Force during the past year in reducing F-89 aircraft accidents. In 1957, the F-89 had a major accident rate of 23 per 100,000 hours of flying. This was substantially lower than the major accident rate of any other operational fighter-type aircraft.

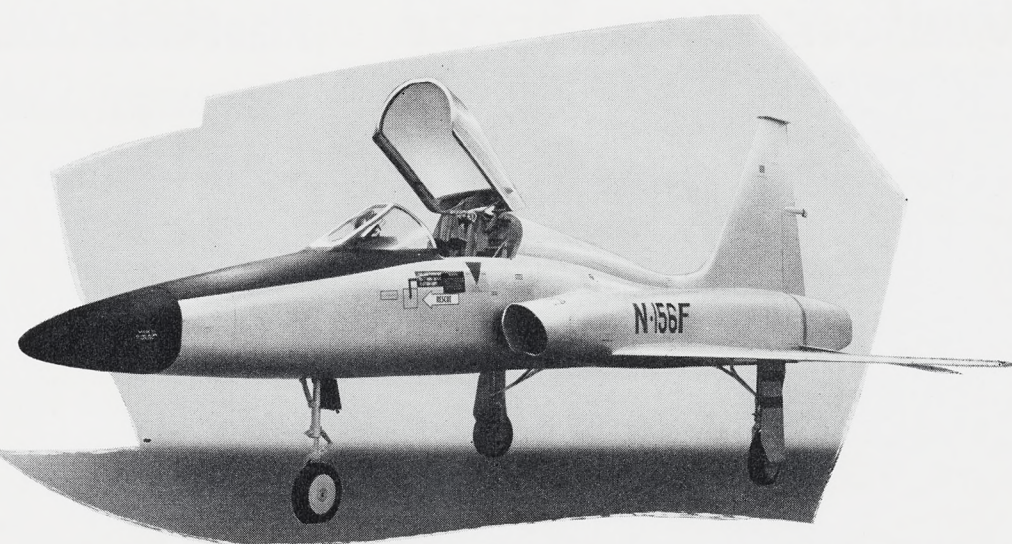
This commendable rate is, to a significant degree, the result of strong emphasis that Northrop management has placed on the air safety effort. In my opinion, Mr. George Russel, general supervisor of your Airworthiness Group, and his people have been largely responsible for this success.

Somehow Northrop seems able to solve a problem or provide a "fix" in a considerably shorter period of time than is usual. This, of course, is paramount in aircraft accident prevention. I know that Mr. Russel has direct access to your top people and apparently they have enthusiastically supported him.

In the coming months, Northrop will be primarily involved in the SM-62 and the T-38 programs. I know that you share my hope that these programs will enjoy the same safety record the F-89 program has achieved.

Sincerely,  
JOSEPH D. CALDARA  
Major General, U. S. Air Force  
Director, Flight Safety Research  
The Inspector General

## N-156F – Counterair Fighter



# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, March 26, 1958

## Engineering Welcomes Norcrafters To Open House Saturday Afternoon

This Saturday Northrop engineers will be showing their families and friends and all other Norcrafters the new Snark, T-38

and N-156F research and development facilities.

As reported in the March 12 issue of the News, the Engineering Open House will afford all Norcrafters an opportunity to tour science center buildings from 12 noon to 5 p.m. The invitation, on behalf of management, by George Douglas, vice-president, Engineering, is extended for all facilities designated on the tour map, Page 2.

The numerous facets of technological advancement to be viewed assure that each visitor will find much of particular personal interest.

For the more scientifically-minded, Nortronics and Radioplane exhibits; design, analytical and project areas; test laboratory equipment; the wind tunnel; and computing equipment are only a few of the attractions.

A special stimulus for visiting the Main Cafeteria is provided by a display of all entries in the NRC Purchase Prize Art Show. While in the cafeteria, women, in particular, should be fascinated by a behind-the-scenes tour of the kitchens.

Of universal appeal are the

T-38 and Hawk missile mockups, executive offices and the executive conference room.

(See OPEN HOUSE, Page 2.)

## A Missiles For Peace — Dr. Ballhaus

The Air Force's first intercontinental guided missile display, featuring a full-size Northrop Snark SM-62, was dedicated last week by Air Force, Northrop and Los Angeles Chamber of Commerce officials.

The Snark dedication was the opening ceremony of the first Western Space Age Conference held last Thursday through Saturday at the Shrine Auditorium.

Dr. William F. Ballhaus was one of the principal speakers during the conference and spoke on "The Anatomy of the Winged Missile".

He pointed out that considerable research now in progress on atomic engines will pave the way for many new applications (See SPACE AGE, Page 2.)

## Company Reports Higher Earnings, Backlog Increase

Northrop's earnings rose substantially for the six months ended January 31, 1958, although sales volume was lower compared with the same period a year ago, Whitley C. Collins, Northrop president, disclosed in a quarterly report to shareholders last week.

Organization of the Company into line divisions has made possible closer operating supervision and tighter cost controls, Mr. Collins pointed out. Northrop's expenses were reduced from \$130,664,617 for the first six months of fiscal 1957 to \$119,555,599 for the same period this year.

Backlog at January 31 had increased to \$275,000,000 from (See EARNINGS, Page 3.)

## Nortronics Makes Debut In Industry

Nortronics, Northrop Aircraft Incorporated's newest operating division, extended formal announcement of formation last week to all American industry.

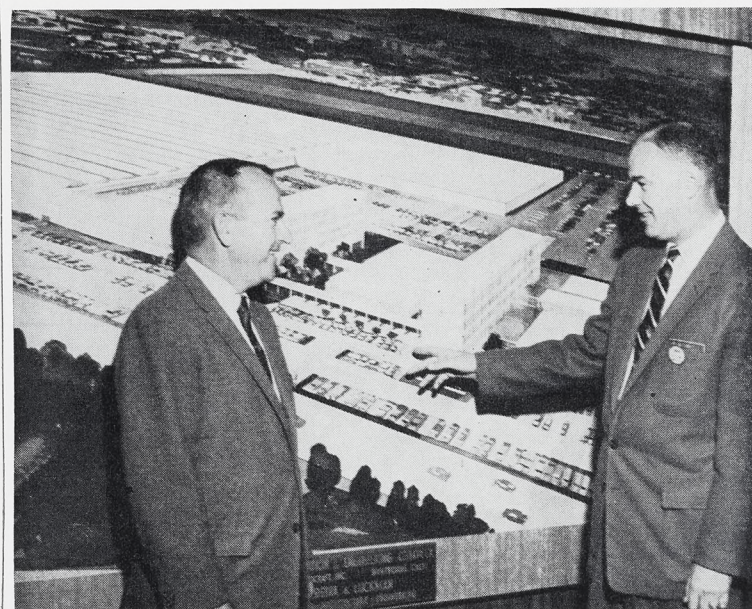
The announcement was in the form of an engraved Corporate introduction describing the experience and broad capabilities combined in the Division.

The Division was first organized in September of last year.

Nortronics payroll currently numbers 4552 persons.

Text of the Nortronics introduction announcement was as follows:

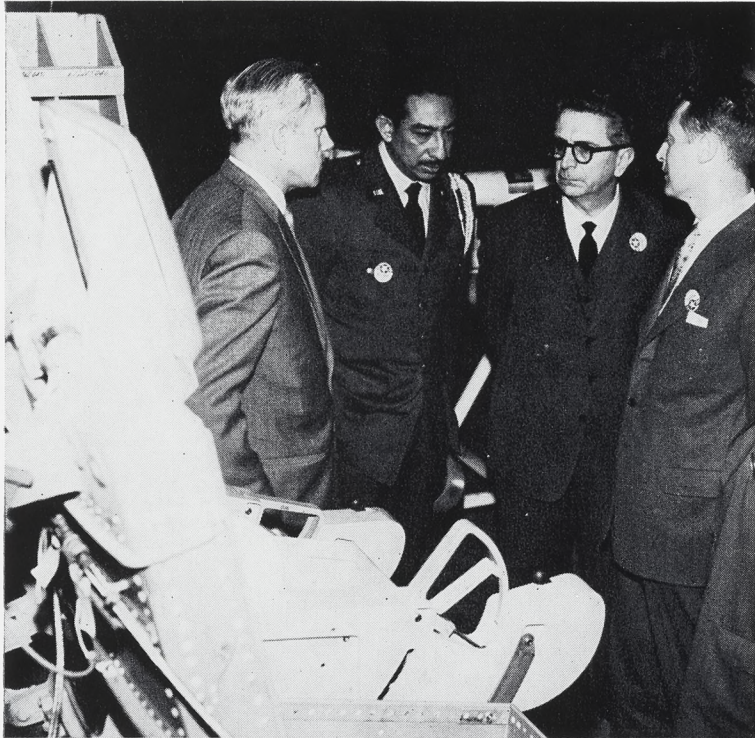
"The design and production activities for aircraft and missile navigation and guidance, autopilots, flight control and servo (See NORTRONICS, Page 3.)



**OPEN HOUSE HOST**—Final preparations for Engineering Open House are being reviewed by, left, George Douglas, vice-president, Engineering, and H. P. Clark, staff assistant to chief administrator. Mr. Douglas extends, on the behalf of management, a cordial invitation to all Norcrafters to visit the new science complex this Saturday.



## Visitors from Spain



**SPANISH AIR DEFENSE COMMANDER**—Reviewing the N-156F program with Stan Erbeck, project manager, left, are Major Oswaldo G. Guarnero, USAF escort officer; Lt. Gen. Julian Rubio, chief, Air Defense Command, Spanish Air Force; and Major Jose Izquierdo, Electronics and Communications Division, Air Defense Command. Their inspection of the N-156F was on behalf of the Spanish Air Force.

## Charles Davis Elected M-C Prexy—Installation April 4

Newly elected Management Club officers for 1958 will be formally installed on April 4 at the Rodger Young Auditorium. It has been announced by Al Kendall, outgoing president.

Official election results, announced by Election Committee Chairman Bob Phillips, revealed that the following members of Northrop supervision are to serve

### MANIRE TO TALK ON PLASTICS USE

Reinforced plastics applications of the Snark missile and the T-38 is the subject of a paper to be read by Blair Manire, Northrop Materials and Process engineer.

Manire will be speaking on March 27 at Pacific Coast Section conference of Society of the Plastics Industry, headquartered at the El Mirador Hotel, Palm Springs. The meeting is classified and attendance is by invitation only.

**OPEN HOUSE TOUR MAP**—Norcrafters are invited to take advantage of the first public opening of the Engineering science center (see story Page 1) to tour, with families and friends, the buildings designated below. The arrowed itinerary incorporates the most recent technological advances in both equipment and facilities.

## Plant-wide Bond Campaign Slated April 14 thru 25

Savings bonds will be front and center at Northrop Field, April 14 thru April 25.

During this period all Norcrafters, as a part of the current national effort to up bond sales, will be given an opportunity to review and increase their payroll deduction purchases.

New Norcrafters who are not presently taking advantage of the payroll bond purchase plan, will find this a good time to check personal budgets and, if possible, sign for weekly deductions.

The drive will be spearheaded by department clerks.

Slogan for this year is "Share in America."

Full particulars next issue.

## Space Age

(Continued from Page 1)

of winged missiles.

"Such engines," he said, "will make it possible for winged missiles to cruise for months over the face of the earth. Should negotiations with Russia for an 'open skies' agreement ever materialize, a fleet of winged missiles with atomic engines and automatic reconnaissance equipment could maintain the constant aerial inspection which is part of the 'open skies' plan.

"If we were to let our imagination rove," he continued, "we could see fleets of atomic-powered winged missiles carrying thermonuclear warheads and cruising endlessly in a condition of immediate readiness to strike at preselected or at commandable targets.

### Peaceful Purpose

"Such fleets of missiles could be (1) an important element of national power, (2) a powerful deterrent to war, and (3) a tremendous instrument for world peace," Dr. Ballhaus concluded.

Lieutenant General Clarence S. Irvine, USAF deputy chief of staff for materiel, unveiled the display Snark and symbolically raised the awesome missile to launch attitude.

Dr. Ballhaus, Corporate vice-president and general manager of Nortronics, presented the display to the Air Force in behalf of the Company. George B. Gose, Chamber president, was host at the ceremonies.

Northrop's director of Quality Control, Bob Catlin, was one of the panelists participating in the technical session on quality control in missile production.

## NEWS BRIEFS

(Continued from Page 1)

of Herb Weiss. Recommendations will be made from the engineering organization to the Management Planning Council. With Council approval, selected projects will be company-funded for the necessary research. "Participation on such military concepts," stated Mr. Douglas, "does not necessarily mean that a production or an R&D contract will follow. Our opportunities for military business will remain the same—dependent on our abilities to engineer and produce quality products at low cost and on schedule. It will give us an opportunity, however, of working more closely with the Air Force in helping them perfect and bring into being the weapon systems of the future. Our future progress, again, depends on how well we do our work."

**SNARK PHASE VISIT**—Northrop is host this week to the Air Force Snark weapon systems phase board—25-26 March. This board, under chairmanship of AMC, is composed of representatives from all assigned commands. Their assignment is to check product progress, evaluate design and production changes, coordinate decisions on changes and refinements, and dovetail all elements of status. Their duty is to insure that the end product will fill the military bill of battle specifications and capabilities.

**EFFICIENCY PROGRAM**—Dan Hill, Northrop treasurer, reports that indirect hours for first six months of fiscal 1958 show eight per cent improvement over last six months of fiscal 1957; direct hours, 4.3 per cent improvement. It is also reported that "other departmental expenses" so far this year are running \$30,000 a month less than the average for fiscal 1957.

**SNARK PRODUCTION**—With Snark production under way, long-time R&D contracts—No. 14175 and No. 18414—will be closed out, it has been announced by General Manager Miller. Continued model improvement and weapon system refinement in the nature of R&D will be rebudgeted and reassigned. These two contracts, 12 years old, are looked upon with fondness by those Norcrafters who had worked so many hours on them. Their closing is a sign of progress on the Snark. Gathering up loose ends and defining grey areas will aid management in evaluation of progress and in the ever important area of cost control.

**FACILITIES MODERNIZATION**—Preliminary sketches of proposed Plant One area modernization have been prepared for presentation to management, reports Willard O. Lindstrand, chief, Facilities and Plant Engineering. This is one of the next steps in Northrop's 10-year facilities master plan. Among projects currently under way is the rehabilitation of the Nortronics ES&E facility to provide for a main entrance from Prairie Avenue. Purpose is to identify the Nortronics facility as a separate Northrop unit.

**SNARK TRAINING SCHOOL**—The U. S. Air Force held official dedication ceremonies yesterday, March 25, for its new Snark missile training school at Amarillo AFB, Texas. Principal speaker was Major General Carl A. Brandt, deputy commander of the Air Training Command. Northrop representatives in attendance included Al Morgan, vice-president, Contracts; Lee Smith, director Customer Services; and Dr. James McClelland, manager, Customer Training. Northrop personnel are headed by Ralph Quinn. (See News Briefs, 12 February 1958.) The Amarillo Snark school is the first formal training offered by the Training Command, USAF, on the intercontinental guided missile. At Amarillo, AF students will be individually taught the operation and maintenance of the USAF-Northrop Snark missile.

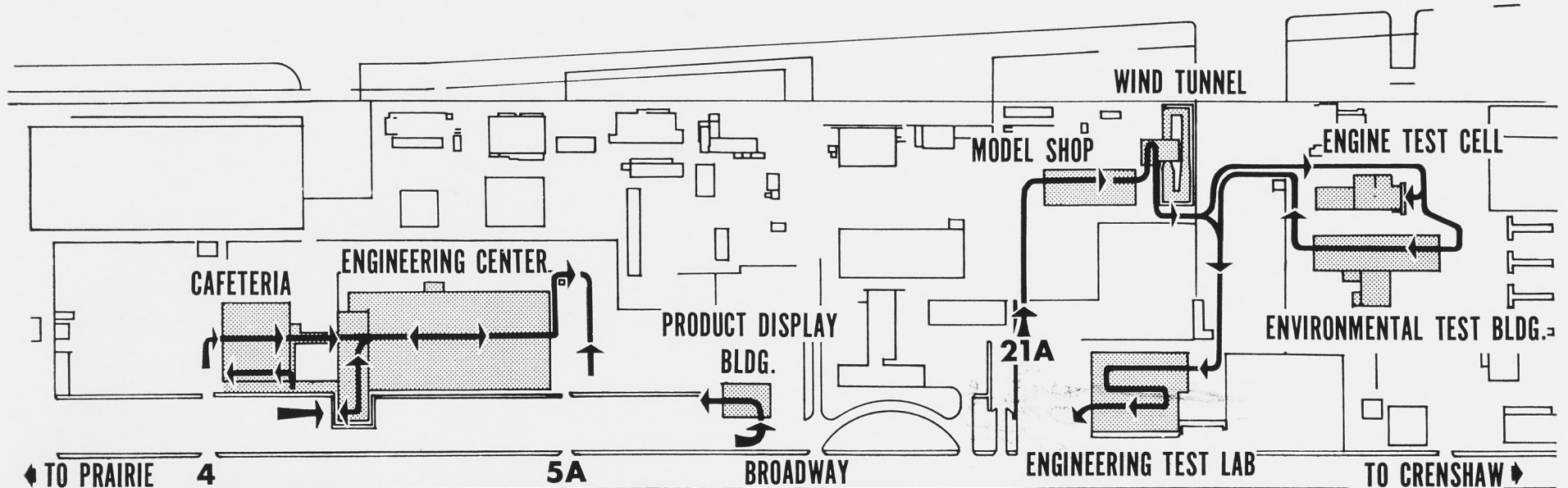
## Northrop News

Vol. 16 Northrop Field, Hawthorne, Calif. No. 13

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CHARLES BRADFORD, Editor

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# New Aid-to-Higher-Education Program Provides for Norcrafter Participation

Northrop Aircraft will match education contributions with Norcrafters.

This feature, unique in the annals of corporation assistance to education, is a part of the new aid-to-higher-education program announced by Whitley C. Collins, Northrop president.

The program offers financial assistance to engineering students

and to privately endowed colleges and universities.

Mr. Collins said the plan was initiated not only as a recognition of the vital role institutions of higher learning play in our way of life, but also because it is American industry's obligation to assist in keeping these schools in a healthy, growing condition.

Four phases are included in-

itally under the program, Mr. Collins disclosed. There is the "matching contributions" blueprint which provides for Northrop to equal individual Norcrafters' donations to accredited educational institutions.

Other phases of Northrop's program call for unrestricted financial grants to schools in California, continuation of a company leadership scholarship program at Claremont Men's College and continuation of the Northrop work-study program now under way at the College of Engineering of the University of California at Los Angeles.

Under the matching contributions plan, Mr. Collins said Northrop personnel will be encouraged to support institutions of their choice anywhere in the United States. He stated the plan was inaugurated because "as good citizens, Northrop personnel have a stake in the financial welfare of our colleges and universities."

Schools which will receive financial support under Northrop's new program are University of Southern California (earmarked for the College of Engineering); California Institute of Technology; Stanford University (College of Engineering); Pomona College; and member schools of the Association of Independent Colleges of Southern California.

## Nortronics

(Continued from Page 1)

mechanisms, and electronic support components are concentrated at Hawthorne in the Nortronics Electronic Systems and Equipment facility.

"The electromechanical, optomechanical, and ground support systems activities of Northrop's former Anaheim Division are integrated in Anaheim at the Nortronics System Support facility. "These two facilities of Nortronics combine a total of 19 years of pioneering, development and production experience for the solution of problems related to these fields."

Further reflecting the Corporation's interest in identifying Nortronics as a self-contained organization is a series of advertisements scheduled to appear over the coming months, Dr. Ballhaus stated.

Nortronics' first ad in the Corporate institutional advertising campaign is a full-page color announcement to be featured during April and May.

# For March of Dimes



**EUGENE W. BISCAILUZ**, Sheriff, Los Angeles County, on a recent visit to Northrop, accepted check from President Whitley C. Collins for ten thousand dimes for the March of Dimes. Sheriff Biscailuz met with many Norcrafters during his plant tour, among whom was Ron Wiggins, NRC treasurer. A long-time Northrop supporter, Sheriff Biscailuz turned the first shovel of dirt at Northrop building ceremonies nearly 19 years ago, and has since paid an annual visit to the Company to renew acquaintances.

## Earnings, Backlog Up —

(Continued from Page 1)

the \$196,000,000 total three months earlier. The increase resulted primarily from additional contracts for the U. S. Air Force's Northrop Snark SM-62 intercontinental guided missile, the report disclosed.

Backlog at January 31 was composed of 45.7 per cent in missiles, 25.1 per cent in subcontracting work, 13.5 per cent

in prime manned aircraft contracts, and 15.7 per cent in target drones and miscellaneous products.

Mr. Collins reported net income of \$2,864,369, equal to \$1.82 a share on 1,570,844 shares of common stock outstanding at January 31. This compares with \$2,236,157, or \$1.47 a share on the 1,523,878 shares outstanding a year earlier.



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
CRENHAW & 82nd ST., Inglewood, W. E. SHARP (5340-28157, ext. 2658). 2-1

(Zone 3)  
ROWAN & 1st ST., East Los Angeles. (Car pool considered.) ALEX MENDEZ (5437-19559, ext. 2020). AN 2-6541. 2-3

(Zone 4)  
PAINTER & WHITTIER BLVD., Whittier. ROBERT DEALY (5450-44690, ext. 2363). OX 6-8573. 2-4

(Zone 5)  
LA PALMA & HWY 39, Buena Park. (Need ride home only.) HELEN ARNOLD (5373-16623, ext. 1885). LA 2-4224. 2-5

(Zone 7)  
AVALON & 223rd ST., Torrance. ROBERT FOOTE (5421-55264, ext. 1359). 2-7

(Zone 9)  
PACIFIC CAST HWY & HAWTHORNE BLVD., Torrance. B. R. WAND (5352-15862, ext. 540). FA 5-0402. 2-9

(Zone 10)  
AVIATION & MANHATTAN BEACH BLVD., Redondo Beach. LILLIAN A. CARY (7745-50168, ext. 1571). FR 2-1637. 2-10

7:30 a.m. — 4:15 p.m.

(Zone 1)  
GLENDALE & CONCORD, Glendale. (Established car pool; desire 2 or 3 more cars.) R. D. GAFFNEY (2565-47085, ext. 683). CI 3-5813. 3-1

(Zone 5)  
KEMPTON & OAK LEAF, Los Alamitos, E. R. DANIELS, Jr. (5120-28151, ext. 2371). GE 1-8297. 3-5

ROSECRANS & LAKEWOOD, Bellflower. (Need ride for 2 men or take riders via Rosecrans.) R. J. MARTIN (2570-52754, ext. 2161). ME 3-2247. 3-5

SANTA ANA FRWY & ROSECRANS, Norwalk. (Desire car pool from La Mirada-Norwalk area.) BOB CAGLE (2551-47351, ext. 2614). UN 4-1804. 3-5

LINCOLN & HWY 39, Anaheim. WALTER A. DAY (8920-27542, ext. 1564). JA 7-4270. 3-5

8:00 a.m. — 4:45 p.m.

(Zone 5)  
GRAND & LA PALMA, Buena Park. (Via Rosecrans.) JOHN UPTON (2592-26672, ext. 2031). LA 2-6430. 5-5

(Zone 8)  
CRENSHAW & 174th ST., Torrance. SANDEE GAW (1400-52272, ext. 2641). DA 4-8789. 5-8

(Zone 13)  
ARBOR VITAE & 4th AVE., Inglewood. JOANNE SONNENBERG (3547-44398, ext. 1872). PL 7-1515. 5-13

(Zone 14)  
FLORENCE & CENTINELA, Inglewood. LORRAINE M. SCHMIDT (2440-54977, ext. 1764). OR 4-2562. 5-14

4:45 p.m. — 1:15 a.m.

(Zone 5)  
CARSON & ATLANTIC, Long Beach. W. G. YARNELL (5564-21508, ext. 555). 8-5

(Zone 9)  
PALOS VERDES BLVD. & CALLE MAYOR, Torrance. RUTH OLSON (3141-33236, ext. 403). FR 6-0577. 8-9

### RIDES WANTED

Miscellaneous — Split Shift

(Zone 5)  
STANTON & LA PALMA, Buena Park. (Hours: 4:15 p.m.—12:45 a.m.; car pool desired.) D. L. SCHRADER (3371-47206, ext. 1414). LA 2-6929. 10-5

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 3)  
ROWAN & 1st ST., East Los Angeles. (Car pool considered.) ALEX MENDEZ (5437-19559, ext. 2020). AN 2-6541. 12-3

(Zone 4)  
PARAMOUNT & WASHINGTON, Rivera. (Via Washington, Garfield, Florence, Van Ness.) J. H. HAGERMAN (5515-20505, ext. 1233). OX 2-5860. 12-4

(Zone 5)  
DEL AMO & WOODRUFF, Lakewood. (Desire 2 riders; via Del Amo, Long Beach Blvd., Artesia.) P. H. MAURER (5421-15210, ext. 1856). 12-5

CHAPMAN & HWY 39, Anaheim. (Via Lincoln, Lakewood, Artesia, Crenshaw; prefer riders from Buena Park.) T. M. ELROD (5501-17641, ext. 2200). 12-5

(Zone 10)  
MANHATTAN BEACH BLVD. & JOHN-SON or DOW, Redondo Beach. (Via Hawthorne Blvd., Inglewood Ave. or Aviation.) MYRTLE BLAISDELL (5508-19481, ext. 2764). FR 4-5279. 12-10

7:30 a.m. — 4:15 p.m.

(Zone 1)  
FLORENCE or MANCHESTER & CRENSHAW, Inglewood. CHARLOTTE WOOL-UMS (9514-27609, ext. 2151). PL 3-7484. 13-1

GLENDALE & CONCORD, Glendale. (Established car pool; desire 2 or 3 more cars.) R. D. GAFFNEY (2565-47085, ext. 683). CI 3-5813. 13-1

(Zone 5)  
KEMPTON & OAK LEAF, Los Alamitos. E. R. DANIELS, Jr. (5120-28151, ext. 2371). GE 1-8297. 13-5

ROSECRANS & LAKEWOOD, Bellflower. (Need ride for 2 men or take riders via Rosecrans.) R. J. MARTIN (2570-52754, ext. 2161). ME 3-2247. 13-5

SANTA ANA FRWY & ROSECRANS, Norwalk. (Desire car pool from La Mirada-Norwalk area.) BOB CAGLE (2551-47351, ext. 2614). UN 4-1804. 13-5

LINCOLN & HWY 39, Anaheim. WALTER A. DAY (8920-27542, ext. 1564). JA 7-4270. 13-5

GRAND & LA PALMA, Buena Park. (Take 3 or 4 riders; consider car pool.) VEL WADKINS (9542-46120, ext. 1471). JA 7-5952. 13-5

(Zone 10)  
PIER & REDONDO BEACH BLVD., Hermosa Beach. (Desire 2 riders.) C. F. MONIZ (5143-43550, ext. 663). FR 6-0734. 13-10

8:00 a.m. — 4:45 p.m.

GRAND & LA PALMA, Buena Park. (Via Rosecrans.) JOHN UPTON (2592-26672, ext. 2031). LA 2-6430. 15-5

3:45 p.m. — 12:15 a.m.

(Zone 2)  
ORANGE GROVE & WALNUT, Pasadena. (Take 2 or 3 riders.) C. M. HERRERA (5550-10110, ext. 2759). SY 3-1771. 16-2

## Electronic Parking Gate To Undergo 30-Day Trial

A new automatic parking lot entrance gate will go into operation on a 30-day trial basis at Lot D starting early next month, it was revealed by John Strater, chairman of the Management Advisory Committee on Parking.

The trial is being conducted to determine the possibility of installing similar electronically operated parking gates at other lots at Northrop, Strater stated.

Described as a railroad crossing-type gate, the automatic system is operated by the use of a laminated parking lot pass. The pass is inserted into a device which opens the gate to permit one car through at a time.

Strater stated that Lot D was selected for the test because personnel using this lot provide a varied cross-section from several departments in the vicinity of the Engineering Test Lab.

A special announcement concerning the issuance of parking lot passes to Norcrafters who use Lot D will be made before the new gate goes into operation.

The new parking gate can al-

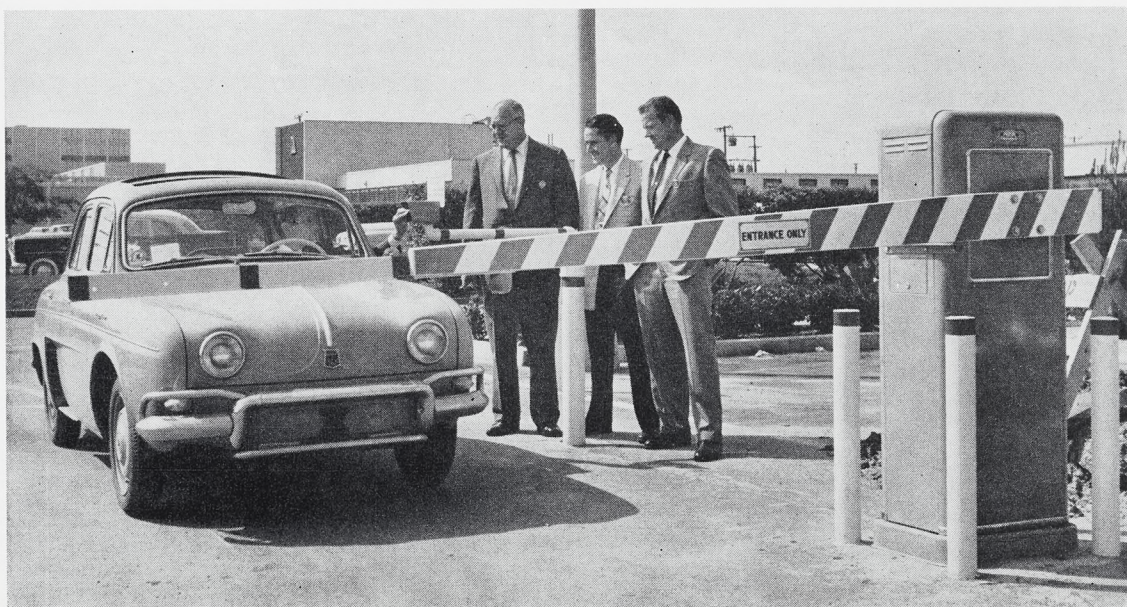
low an auto to pass through in four seconds time. Strater pointed out that automatic systems, such as the one being tested here, are in use at the UCLA campus and at Lockheed Aircraft. At both locations, the automatic gates have proven to be a speedy solution to parking lot entrance problems, he stated.

Strater emphasized that conditions governing the availability of parking space to Lot D personnel and share-the-riders will be unchanged during the test period.

During the first few days that the gate is in use, representatives of the Parcoa Company which leases the equipment will be on hand to assist Lot D users. It is expected that some minor delays will be experienced until drivers become familiar with the operation of the automatic gate.

Special exits from Lot D will permit unrestricted auto traffic at the close of shifts but will obstruct any vehicle attempting to enter the lot. Plainly visible signs will identify entrance and exits.

**AUTOMATIC PARKING GATE**—Preview demonstration of new parking gate which goes into operation at Lot D early next month is given by Dean J. Madsen, general supervisor, Engineering Test. Observers include Ken Yost, general supervisor, Engineering Lab Services; John Kearney, parking administrator; and John Strater, chairman, Northrop's Management Advisory Committee on Parking.





# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

GAGES, Stewart-Warner; fuel, w/tank unit kit; ammeter; vacuum, 0-30 in; water temperature, 2; 72" tubing; \$25. FR 9-4621. A

IRONER, Whirlpool deluxe console, \$100. OS 5-3235. A

MOTORCYCLE, 1952 Velocette, single, 21 cc, \$250. DA 9-1838. A

REFRIGERATOR, electric, top freezer, \$85. DA 4-7623. A

CHILDREN'S CLOTHING, girl's, sizes 4-7; Teddy Bear coat, dresses, skirts; boy's, sizes 6-18 mo, suits, caps. FR 9-9616. A

BEDROOM SET, blonde modern, 2 night stands, book headboard, dresser, mirror, \$75. DA 6-4379. A

MGA, 1956, \$2195. FR 5-0421. A

TRAILER, 4'x6' utility, 1958 license, safety chain, \$25. FR 5-5838. A

RIFLE, Remington 511 .22, bolt action, clip magazine, Weaver G4 scope, cleaning rod, \$25. CL 5-2219. A

ENCYCLOPEDIA, Britannica, 24-vol. set; atlas; 2-vol. dictionary, assume payments. DA 3-1513. A

STOVE, Wedgewood, 4-burner, \$50. AX 4-2529. A

THERMOS SET, Macpherson plaid, \$10. AT 7-5453. A

HOUSE, 3-bdrm, 1 1/2 baths, hardwood floors, 3 1/2 yr old, Palos Verdes stone trimmed, \$3000 down. DA 9-6594. A

BUICK, 1949 Super 4-dr, Dynaflo, one owner, \$300. NE 1-5941. A

WASHER, Laundrell automatic, \$35. RE 1-7492. A

BOAT, 14' custom-built, glassed, outboard, \$175. PL 5-4271. A

PLYMOUTH, 1947 4-dr, Southwind heater, FR 9-6713. A

VACUUM CLEANER, tank-type, w/attachments, \$25. FA 1-3059. A

CARPETING, wool, 48 sq yd, w/waffle pad, \$60. FR 4-2505. A

IRONER, Easy 640A, \$25. FR 5-4358. A

DINETTE SET, table & 4 chairs, wrought iron, black & grey leather. OR 4-7034. A

FREEZER, International Harvester chest-type, 18 cu ft, \$125. FR 5-1294. A

CHEVROLET, 1950 4-dr, engine overhauled, FR 2-1439. A

PLYMOUTH, 1954, \$650. DA 4-5532. A

WATER SOFTENER, Reverse, w/necessary plumbing, \$35. OS 6-2597. A

FORD, 1940 2-dr sedan; full-race Olds engine, 3/4-stroke, 4" bore, full-race billet cam, milled heads, Johns pistons, dual 4-throat carbs; 4000-psi Chrysler ind. clutch; 1939 Cad trans; \$450. FA 8-7796. A

PISTOL, S&W .38 police special; belt & holster; \$45. DA 3-5906. A

OLDSMOBILE, 1953 4-dr 98 sedan, Hydramatic, power equipment, autronic eye, \$775. DA 3-7002. A

LIVING ROOM SET, maple, green & white upholstery, sell separately or as set, \$200. JA 7-8745. A

BUICK, 1957 Special Riviera, Dynaflo, power equipment, extras. AX 4-2194. A

HOUSE, 3-bdrm, family room, 2 baths, heavy shake roof, forced air, fireplace, custom-built, must sell, \$950 down. DA 3-7548. A

FURNITURE, for 5 rooms, w/ruqs, PL 5-0752 between 11 a.m. & 2 p.m. A

MOTORCYCLE, 1954 BSA, single, 500 cc; new paint, tires, wiring, engine & gear box; \$375. TE 1-1145. A

FREEZER, Ben Hur chest-type, 17 cu ft, cost \$600, \$150. OS 6-3509. A

SEWING MACHINE, Singer, \$160. TE 3-9902. A

FURNITURE, rocker, green tweed, \$15; desk, child's, \$5; heater, bathroom-type, \$2. DA 4-6748. A

CAR PARTS, Mercury; 1953 rebuilt engine, complete, 5000 mi, \$60; 1950 radio, transmission, other parts. FR 2-2911. A

MOTORCYCLE, 1956 AJS, street equipment, all chrome, \$525. OS 6-6108. A

STOVE, 1954 RCA Deluxe 30" electric, 4-burner, large oven, \$45. DA 3-1402. A

CABIN CRUISER, 25', sleeps 2. Cad engine, glass bottom, Philippine mahogany, bait tank, built-in stove & ice box, \$3000. DA 4-7959. A

ENCYCLOPEDIA, American Peoples, w/children's set, research service, 12-vol Great Literary Works, coffee-table book-case, EA 2-3665. A

TRAIN EQUIPMENT, HO-gauge, 3 locomotives, 12-pc rolling stock, fig. 8 track layout w/spur mounted on 3x9 plywood, power pack, accessories, figures, books, \$50. FR 9-2774. A

HOUSE, 3-bdrm, 2 baths, 1600 sq ft, Palos Verdes hills, \$26,850. FR 5-5446. A

SKI BOOTS, Stolz, woman's size 6 1/2, \$40. GE 9-9542. A

POWER MOWER, Pennsylvania Briaqs & Stratton, 1.5 hp, semi-pneumatic tires, handle clutch, cost \$120, \$65. DA 9-1677. A

## FOR SALE

ENCYCLOPEDIA, Britannica Junior, complete set, \$75. KE 5-2024. A

FURNITURE, sectional sleeper, 2-pc arey, \$35; chair, contour-type w/arms, arey plastic, adjustable, \$35. DA 3-1030. A

PLYMOUTH, 1948 club coupe, \$95. DA 3-4628. A

CHEVROLET, 1955, new paint, dual exhaust, must sell. OS 6-6108. A

DODGE, 1947 4-dr sedan, padded dash, rear-dr safety locks, clutchless drive, insurance included if eligible, \$292. FR 5-5298. A

TAPE RECORDER, Revere, dual speaker, hi-fi w/built-in radio, \$200. Box 1306. A

DRAFTING MACHINE, Bruning left-hand model, 18" aluminum scale, \$60. Box 1305. A

TIMING LIGHT, Sun automotive, \$10. OR 4-1958. A

TRAIN EQUIPMENT, HO-gauge, locomotives, freight & passenger cars, EX 6-6316. A

TRAILER HITCH, Viking, adjustable, cost \$25, \$12.50. TO 7-0487. A

MOTORCYCLE, 1942 Harley-Davidson 45, recently overhauled, \$150. OS 5-2183. A

DOG, wirehair terrier, 2 mo old, male, AKC, \$30. OS 5-1833. A

BOAT, 14' Fiberglass, Mercury Mark 20 outboard, \$325. DA 4-8432. A

ROLLER SKATES, shoe-type; girl's, size 5; boy's, size 6; \$10. OR 1-1660. A

ROCKER, platform-type, rose frieze, w/ottoman, \$20. FR 9-1592. A

ROCKER, platform-type, arey upholstery, \$20. FR 9-2659. A

WEDDING RINGS, 1 yr old, \$40. FA 8-0363. A

OLDSMOBILE, 1951 Deluxe 98, accept .38 revolver, 16 mm projector or automatic washer as part payment, \$300. LA 5-6027. A

TRAILER, 4x6 utility, all metal, 3-wheel, OS 5-4156. A

ELECTRONIC EQUIPMENT, 1957 Heathkit, O-11 scope, vtvm, fmvt sweep generator, signal tracer, r-f signal generator; Eico tube tester; \$250. Box 1302. A

OLDSMOBILE, 1950, new battery, generator & regulator, assume payments, Box 1301. A

HOUSE, 3-bdrm, 2 baths, Hollypark, 2-yr old contemporary, fireplace, w/w carpeting, draperies, landscaped, fenced, GI resale, FA 1-2327. A

BEDROOM SET, twin-bed box springs & mattresses, 4-drawer chest, dressing table, \$65. OS 6-9567. A

CAMERA, Rolleicord IV, full synch, shutter, 3.5 Xenar lens, Hartley field lens on ground glass, Heiland flash gun, lens shade, closeup lens, filters, focusing hood, \$95. DA 4-7146. A

FORD, 1956 Sunliner convertible, black & yellow, new top, \$1649. PL 4-1596. A

WASHER, Easy Spindrier, cost \$158, \$65. OS 6-8565. A

FURNITURE, 2 small desks, 4-drawer, \$8 ea; Babyline wardrobe, \$20. FR 4-3365. A

GUNS, shotgun, Savage 12-gauge automatic, w/case; pistol, H&R .22 9-shot; rifle, Remington 512 .22. FR 9-3128. A

JAGUAR MANUAL, factory repair, cost \$12.50, \$7.50. OS 5-7831. A

LOT, 70x160, level, Lunada Bay, Palos Verdes, terms, \$6500. OR 1-4361. A

PANEL TRUCK, 1951 Dodge 1/2-ton, \$275. DA 4-3845. A

REFRIGERATOR, Norge, 11 cu ft. OR 2-1511. A

BUICK, 1953 Roadmaster, elec. windows & seats, extras, one owner, \$700. OX 3-4016. A

JAGUAR, 1952 coupe, 1954 XK140 engine & trans., new paint & brakes, equity for \$400 or your car, assume payments totaling \$700. OR 2-5405. A

ENGLISH FORD, 1951, \$225. EX 7-2055. A

FORD, 1951 Custom 4-dr, new seat covers & paint, \$295. FR 4-3111. A

CADILLAC, 1941, convertible coupe, Carson top & other modifications, \$150. FR 2-1003. A

CABIN CRUISER, 1957 Bryant 17', 35 hp Evinrude Lark, electric starter, w/trailer & bait tank, \$1900. OR 7-2098. A

TV SET, Motorola 21", \$90. TO 7-4910. A

CLOTHING, woman's size 12, suits, skirts, dresses, \$2-\$5 each; shoes, woman's size 6 1/2 AA, high-heeled, pumps, sandals, colors, \$2 pr. Box 1303. A

PLAYGROUND SET, heavy duty, 2" iron pipe threaded sections, teeter-totter, rings, swing, \$15. ME 4-1189. A

MATTRESSES, 2 twin-size, Simmons Beauty Rest, \$45 ea. FR 9-1244. A

SKIS, Sigmond Ruud (Oslo), 6' super hickory, plastic bottom, steel edging, A&T safety bindings, poles, \$35. AX 4-4613. A

BABY EQUIPMENT, playpen w/royal blue sun canopy; stroller, red & white candy-striped; bathinet; \$20. Box 1313. A

## FOR SALE

MECHANIC'S TOOLS, complete set, aircraft precision sheet metal tools, for experimental mechanic, w/wooden box, \$125. Box 1304. A

BEDROOM SET, mahogany provincial, dresser, vanity chair, night stand, bed, mirror, \$75; mattress & box spring, foam rubber, Enlander Redline, \$90. OS 9-4434. A

CHEVROLET, 1953, assume payments of \$51 mo including insurance. PO 6-8278. A

TV-RADIO, Stromberg-Carlson, 12 1/2" TV, FM radio, mahogany cabinet, \$35. OR 1-0574. A

HUDSON, 1952 4-dr Wasp, \$100. FR 9-9306. A

DOG, Belgian Shepherd female, 1 1/2 yr old, black & tan, gentle, playful, has shots, \$6. OR 2-2891. A

FURNITURE, bedroom set, walnut, double bed, dresser w/mirror, high chest, \$75; 3-pc sectional, \$40; 2 living room chairs, \$20 ea; spinet, small desk-type, \$10. FR 5-0743. A

OLDSMOBILE MANUAL, factory service, 1950-1951 6-cyl & V8, \$2.50. FR 9-7224. A

RIFLE, Marlin 336A 30-30, box of shells, \$55. EX 9-2530. A

TV SET, G.E. 17", table model, \$45. Box 1308. A

BOAT TRAILER, for 16'-21' boat, \$75. Box 1307. A

TRAIN EQUIPMENT, Lionel, complete set, cost \$115, \$65. OR 1-5447. A

BICYCLE, Schwinn World Traveler light-weight, girl's, 24" wheels, 3-speed shift, hand brakes, \$30. OR 1-6091. A

HENRY J, 1951, 27 mpa, must sell. OS 6-7319. A

LOT, Hesperia, 1 1/2-acre, water & electricity, near Hesperia Inn & golf course, \$2800. OS 9-3188. A

OLDSMOBILE, 1953 hardtop 98, power equipment, new battery, brakes & fuel pump, \$800 or assume payments of \$58.25 mo. FR 6-6239. A

REDUCING EQUIPMENT, 1956 Stauffer, couch & automatic timer, \$100. OR 7-2070. A

CHEVROLET, 1940. OS 6-8371. A

WASHER, Kenmore automatic, bolt-down type, \$35. UN 8-4336. A

SAILBOAT, National design, glassed, new sails, outboard, \$650. PL 6-2593. A

REFRIGERATOR, G.E. 6 cu ft, \$50. DA 9-5097. A

DODGE, 1949 2-dr sedan, \$250. DA 4-4417. A

WASHER, 1952 Maytag, square aluminum tub, \$20. HA 9-7879. A

BOAT, 12' Fiberglass car-top type, aluminum, wide-beam & modified glasspar, chrome fittings, 3 seats, short deck, approx. 115 lb, \$170. OS 6-7531 after 10 p.m. A

BABY FURNITURE, chrome high chair, stroller, crib & mattress, \$35. OR 8-3150. A

BUICK, 1953 Special sedan, Dynaflo, \$895. OS 5-9054. A

FORD, 1941 2-dr coupe, rebuilt 1950 Oldsmobile engine, Lincoln Zephyr transmission, new brakes & tires, dual exhaust, 1954 Oldsmobile 4-throat carb, terms, \$400. PL 2-8683. A

DRAPES, 3 pr. (6 panels), dk. green antique silk brocade, \$25. WE 8-1714. A

BUICK, 1955 Special Riviera, white, extras, \$1300. JA 7-2530. A

WASHER, Kenmore Visomatic wringer-type, 2 yr old, timer, suds pump, \$30. FR 8-2714. A

GOLF CLUBS, matched set, 3 woods, 9 irons, putter, \$60. DA 4-7323. A

MERCURY, 1955 Montclair hardtop, power equipment, Merc-O-Matic, \$1595. FR 4-8094. A

WASHER, Bendix, automatic, \$25. VE 9-7378. A

BUICK, 1949 4-dr sedan, new tires, \$225. FR 5-8562. A

HENRY J, 1951 6-cyl, new seat covers, \$200. FR 9-8051. A

BICYCLE, 28" boy's, \$10. DA 4-6339. A

PUPPIES, German Shepherd, AKC; male, \$50; female, \$35. Box 1311. A

CLOTHESLINE, Barclay rollaway-type, cost \$55, \$15. DA 9-2847. A

HOUSEHOLD FURNISHINGS, dishes & linens, antique & modern. GR 7-1539. A

POKER TABLE, octagonal, green felt top, \$15. PL 4-8903. A

CAMERA, Retina 35 mm, case & shoulder straps, OS 6-6361. A

LOTS, 2, Hesperia, equity, low down payment. TO 9-8937. A

HOUSE, Pacific Palisades, view, take smaller house as down payment. Box 1309. A

APPLIANCES, stove, Heatrola Estate, 4-burner, oven & broiler, \$35; washer, 1957 Deluxe Speed Queen, cost \$349, \$150. GE 1-4233. A

FURNITURE, blonde, dining room set, table & 6 chairs; corner table; \$35. OR 7-1326. A

STOVE, Frigidaire electric, 30" oven, automatic, \$85. PL 5-4759. A

CHEVROLET, 1948, \$75. PL 6-6177. A

WASHER, GE automatic, \$80. FR 5-0813. A

MERCURY, 1954 Monterey 2-dr hardtop, power equipment, \$750. FR 7-2158. A

PLYMOUTH, 1947 4-dr, late engine, FR 9-6713. A

BOAT, 14' Fiberglass, compass, steering cable, life jacket, remote control, bait tank, extra prop, rebuilt Mark 25 engine, trailer, \$650. FR 6-5669. A

BOAT, Burchcraft Bia Fisherman 14', trailer, 40 hp Scott Atwater electric, controls, \$1200. OS 5-6809. A

# Cal Scientist, Industrialist Of the Year, to be Chosen

Two juries composed of prominent scientists, business leaders and educators will select California's Scientist of the Year and Industrialist of the Year, it has been announced by the California Museum of Science and Industry.

A \$5000 cash award will be given to the winning scientist and a distinctive Token of Merit to the winning industrialist. The competition is open to all California residents for achievements in 1957, according to Dr. Raymond B. Allen, chancellor of

UCLA and general chairman of the Museum-sponsored awards program.

Dr. Lee A. DuBridge, president of the California Institute of Technology, is chairman of the six-man science jury. Dr. George C. S. Benson, president of Claremont Men's College, heads the eight-man industry jury.

Nominations may be made by any California resident before April 15. Official entry forms can be obtained at the News office or by calling extension 2456.

## FOR SALE

CHEVROLET, 1952 convertible, green, Powerglide, must sell. AX 4-4768. A

FURNITURE, chair, green armless modern; mirror, 24" round, w/gold frame. FR 9-5144. A

CHEVROLET, 1956 210, 225 hp, stick shift, \$1350. OR 1-4304. A

TV SET, Emerson 17", table model, \$50. OR 2-1104. A

CHEVROLET, 1956 convertible, Powerglide, Powerpac, power steering, new tires, \$1695. PL 6-3147. A

WASHER, Westinghouse L-5 automatic, \$65. DA 3-0270. A

PONTIAC, 1937 2-dr sedan, \$50. CL 6-1981. A

PLYMOUTH, 1951 Concord 2-dr, new paint & seat covers. FR 9-9616. A

FREEZER, 1957 Amana, 16 cu ft chest-type, assume payments or pay balance. Box 1316. A

FURNITURE, bed davenport, Sealy 6', w/chair, \$60; rug, 12'x15' blue wool, cost \$150, \$60; both for \$100. PL 4-1964. A

SAILBOAT, 17', w/trailer, \$300. Box 1315. A

BASSINET, w/mattress, \$10. PL 5-2715. A

## WANTED TO BUY

PORCH SWING, old-fashioned w/chains. RE 1-7492. B

TEXTBOOK, General Chemistry, Dr. Linus Pauling, 2nd Edition. FR 9-9616. B

CLOCK, ship's bell-type, brass 6"-10" diameter, good working condition or repairable, w/matching barometer if possible. CH 9-6418. B

FILING CABINET, metal, 1-4 drawers. DA 3-3863. B

OUTBOARD, 1.5-2 hp, preferably air-cooled. UN 4-5349. B

TONNEAU COVER, 1957 Ford. FR 4-4140. B

CAMERA, Exa or Exakta Ila, 35 mm, Zeiss Tessar lens. OS 5-7340. B

OUTBOARD, 25 hp or better, preferably not in running condition. FR 5-8718. B

BINOCULARS, 7x50, preferably American make. Box 1314. B

## FOR TRADE

BICYCLE, 20" boy's Schwinn, trade for 20" girl's bicycle. OS 6-3633. C

SHOTGUN, Browning automatic 12-gauge, Cutts comp., extra barrel & tubes, trade for 4x5 Speed Graphic camera. GA 1-1501. C

CHRYSLER, 1947 sedan, trade for outboard, boat, auns. DA 9-1568. C

TRANSMISSION, 1955-1956 Chevrolet Powerglide V8, installed free, trade for column- or stick-shift transmission. FA 8-8899. C

PLYMOUTH, 1954, trade for 1/2-ton pickup. DA 4-5532. C

## FREE (to be given away)

BICYCLE TIRE, Royal Master, full size, OR 4-5652. D

MAGAZINES, Time and Newsweek back issues. FR 9-9616. D

## RENTALS OFFERED

APARTMENTS, 2-bdrm, unfurnished, in triplex, new, all deluxe features, 880 sq ft living area, near South Bay shopping center, 2 children OK, available April 1, \$90 mo. FR 2-0840. E

APARTMENT, 2-bdrm, furnished, w/w carpeting, south Redondo, \$100 mo. FR 4-2945. E

APARTMENT, 1-bdrm, furnished, disposal, garage, adults, \$95 mo. OR 4-6197. E

APARTMENT, 1-bdrm, furnished, adults only, utilities paid, \$75 mo. OS 6-8331. E

HOUSE, 1-bdrm, unfurnished, garage, patio, child OK, \$70 mo. FR 2-8256. E

ROOM, furnished, near Northrop, prefer man, \$7 wk. OS 6-0346. E

APARTMENT, 1-bdrm, modern, near Northrop, \$79 mo. OS 6-4734. E

HOUSE, 2-bdrm, washer, stove, landscaped, Lakewood Plaza, gardening & water included, \$125 mo. FA 1-3059. E

APARTMENT, 1-bdrm, furnished, garage, laundry room, w/washer & dryer, \$115 mo. OR 8-0738. E

APARTMENT, 1-bdrm, unfurnished, beam ceilings, disposal, double closets, garage, near ocean. FR 4-3365. E

## RENTALS OFFERED

ROOM, adjoining bath, near Northrop. OS 6-8724. E

APARTMENT, 1-bdrm, hardwood floors, yard, Hawthorne, \$75 mo. PL 4-7725. E

ROOM, modern, near Northrop, \$8 wk. OS 6-9567. E

ROOMS, 2 connecting, private entrance, 2 men. OR 2-2494. E

ROOM, private entrance, man only, near Northrop, \$7 wk. OS 6-7104. E

APARTMENT, 1-bdrm, furnished, utilities paid, Hawthorne. OS 6-5921. E

ROOM, private entrance & bath, parking, near Northrop. OS 6-6696. E

ROOM, share bath, private entrance, off-street parking, near Prairie & Century, \$30 mo. Box 1303. E

ROOM, private entrance & bath, men only, \$12 wk; for 2, \$8 wk. DA 4-4750. E

APARTMENT, 2-bdrm, unfurnished, near Northrop, \$100 mo. OR 7-4021. E

SHARE HOUSE, Manhattan Beach, desire lady to share with same. FR 2-6029. E

APARTMENT, 1-bdrm, furnished, many cupboards, large closet, furnace, adults, no pets. NE 1-9902. E

HOUSE, 2-bdrm, El Segundo, garage disposal, garage, \$115 mo. EA 2-4043. E

APARTMENTS, 2-bdrm, modern, near Northrop, \$85 mo. OS 6-2649. E

APARTMENT, 1-bdrm, unfurnished, triplex. FA 8-7257. E

APARTMENT, 1-bdrm, unfurnished, duplex, garage, disposal, \$80 mo. FR 6-4371. E

APARTMENT, 2-bdrm, unfurnished, modern, enclosed yard, garage, children OK, \$85 mo. PL 4-8281. E

APARTMENT, 1-bdrm, unfurnished, disposal, near Crenshaw & Compton, \$70 mo. DA 4-1905. E

## RENTALS WANTED

HOUSE, 3-bdrm, unfurnished, within 2 blks of ocean, garage. FR 9-9616. F

## PERSONALS

IRONING & SEWING, in my home. DA 4-6339. L

## FOR SALE OR TRADE

DOG, Boston terrier, sell or trade for 8 mm movie projector or power lawn mower. OS 5-9695. M

STUDEBAKER, 1953 V8 sport coupe. OS 5-7924. M

WASHER, Bendix automatic, \$35 or trade for water skis or camping equipment. FA 8-5958. M

METROPOLITAN, 1957, \$1450 or trade equity for late Plymouth or Ford. EM 6-8649. M

AMPLIFIER, Gibson GA-30, 6L6 output, twin speakers, suitable for guitar or hi-fi, \$75 or trade for Martin O-hole guitar. TH 2-3294. M

GUNS, shotgun, Winchester 97 pump 12-gauge, \$45; pistol, S&W K .22, target hammer, \$65 or trade for Ruger single 6. DA 3-2004. M

DODGE, 1941 4-dr sedan, rebuilt engine, PL 4-4082. M

HOME, 3-bdrm, den, 2 1/2 baths, 2 fireplaces, 2300 sq ft, custom-built, Palos Verdes, corner lot near elem. school, \$39,750 w/\$10,000 dn or trade for equity in home or units. PL 5-5719. M

MOTORCYCLE, Francis Barnett 54, 200 cc, \$125 or trade for car. OR 1-1660. M

SCOOTER, 1957 Zundapp, 4-speed transmission, 65 mpa, 60 mph, \$390 or trade for 3/4-ton pickup. OS 5-6809. M

HOUSE TRAILER, 1940 Air Flow, eastern-built; apt-size stove; sell separately or \$125. VE 9-4038. M

TRAIN EQUIPMENT, Lionel, sell or trade for HO-gauge train & equipment. NO 2-2896. M

TENT, 9x12 umbrella-type, cost \$85, \$50 or trade for Skil belt sander. FA 8-8899. M

RING, man's, approx. 1/3-carat diamond, \$90 or trade. FR 4-4140. M

BUICK, 1954 Special 4-dr sedan, Dynaflo, \$895 or trade for 1955-1956 Chevrolet 4-dr station wagon. OS 5-9054. M

ENGINE, Lycoming, 65 hp, sell or trade for 18' boat trailer. Box 1312. M

LOT, Grant's Pass, Oregon, 20-acre, water & electricity, business location, \$2500 or trade for equity in R3 lot. Box 1310. M



## Tops In The Hoop Leagues



**SEASON'S BEST PERFORMERS**—Shown holding the coveted awards for their athletic prowess on the basketball court are, from left, Doug Barnes, Snark League most valuable player; Mel McFadden, tournament high scorer; Fritz Armenta, night league high scorer; Myron Baker, Scorpion League most valuable player; and Gerald Stephens, Snark League high scorer. Not present is Don Greco, Scorpion League top scorer. Awards were season's climax.

## Courtesy Boat Inspection Set for Saturday Extended to All Owners

Owners of trailered boats are invited to take advantage of the NRC Boat Club's annual courtesy inspection slated to take place this coming Saturday, March 29.

Steve Sabo, commissioner, stated that the inspection will be conducted in Parking Lot 0 from 10 a.m. to 2 p.m. This year, he noted, members of U. S. Coast

Guard Auxiliary Flotilla 65 will perform the safety check. Decals will be issued to boats which meet the equipment and safety standards specified by the Coast Guard.

For additional information, boat owners are asked to contact the Personnel Activities office, extension 2784.



**NO FISHERMAN'S TALE**—Surf fishers with trophies above are those who caught the biggest fish during the past year. From left: Stan Nutupski; William Gray; Harry Outland; John Pawlicki, NRC Surf Fishing Club commissioner; Bob Ketchum, guest speaker; Perry Cannon; and Dave Rankin. Popular activities sponsored by Club have gained large followings over the past months and all Norcrafters interested in this sport are invited. See Good Time Table.

# SPORTS

*The Northrop News*

## Plans for Spring Softball Season Topic of Team Managers Meetings

The symptoms are unmistakable: the temperature warms a little more each day, the sun dips beyond the horizon a little later each evening, the calendar reads that it's spring, the leather glove is pulled out of its winter storage place.

The diagnosis: "softball fever". The prescription: sign up for the NRC softball leagues.

"It's that time again," states Ken Kleir, commissioner of the NRC Softball Club, referring to the approaching softball season. He said that plans for this year's leagues will be outlined in a meeting with team managers tomorrow evening, March 27, 7:30 p.m. at the NRC Clubhouse.

Meeting of all night shift team managers will be held next Tuesday, April 1, 1:30 p.m. at the Clubhouse. League rules, sched-

ules, use of equipment and other softball details will be discussed at both meetings. Also, the 1958 rule book will be available to

managers.

Said Kleir, "We're looking forward to a big year. See you at the managers meetings."

## Success of Mammoth Outing Spurs Second Ski Club Trip

Overwhelming success of the Ski Club's recent trip to Mammoth has spurred plans for another three-day weekend trip to the popular winter resort. Plans for the mountain holiday are on the agenda at tonight's meeting at the NRC Clubhouse, 7:30 p.m.

Commissioner William Loomis reports that the Mammoth trip is slated for April 18, 19 and 20. He said that rates are \$3.50 per day and that reservations should be in by tonight.

All Norcrafters interested in the trip are urged to attend tonight's meeting. Also, folks who would like to join the new club are cordially invited. Beginners and family participation is en-

couraged, Loomis stated. Already there are 68 active members. He advised, "Join now before the snow melts and the ski season ends."

Special attraction for the April weekend outing will be the Senior Men and Women downhill race with awards for the winners.

## Table Tennis Playoffs Due

An all-facility championship table tennis playoff is on tap for this coming Saturday, March 29, it was announced by Don Greco of the Personnel Activities Office at Hawthorne.

Scheduled to start at 10 a.m. at the NRC Clubhouse, Hawthorne Boulevard, the tournament will feature a round robin playoff between teams from Torrance, Hawthorne, Anaheim and El Segundo.

All Northrop personnel are eligible to enter. Entry forms are available at Personnel Activities offices of the above facilities. A team trophy plus individual trophies will be awarded winners.

For additional details, contact Personnel Activities.

## NRC Sports Car Club To Vote New Officers

Special note to NRC Sports Car Club members was issued recently by Commissioner Bill Hanna. Reason was to alert members of the annual election of officers slated for the April 10 meeting.

He stated that the Club will elect a commissioner and other officers for the coming year and urged that all members participate in the voting.

## Annual Skin Divers Awards



**SKIN DIVERS GO HAWAIIAN**—Occasion was the annual NRC skin diving trophy presentation which followed a Hawaiian Luau at the NRC Clubhouse recently. From left: Bernie Allen, Russ Haverstock, Dave Carney, who accepted the trophy in behalf of Ed White, and Lillian Kemble, Night Shift Skin Diving Club commissioner.



**MORE TROPHY WINNERS**—Others who received annual awards at the Luau included, from left, Jim Ashby, Ralph Gonzales, Tom Wilkinson, Bob Koerner and Doug Donner.

## NRC Good Time Table for April

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days), Jack Duer**  
Meet Wednesday, 6:30 p.m. Archery classes now in session.

**ARCHERY (nights), Mickey Mechling**  
Meet Wednesday, 12:15 p.m.  
Election April 16.

**ART CLUB (days), Forrest Ayst**  
Meet in Annex every Thursday, 7 p.m. Models furnished by NRC. Sculpture class meets every Wednesday, 7:30 p.m. 11th Annual Purchase Prize Art Show now open.

**BIBLE STUDY, Roy Stahl**  
Plant 1—Daily, 11:30-12:15, Tool Design Bldg.; 11-11:45 a.m., 5566 Conf. Rm. Plant 11—Mon. & Thurs., 12-12:45 p.m., Conf. Rm. 2.  
Eng. Bldg.—Daily, 12-12:45 p.m., Reliability Conf. Room.  
Torrance—Tues., 12:15-1 p.m., Bldg. K2 Conf. Room.

**BOAT CLUB, Steve Sabo**  
Meet 1st Wednesday of month, 7:30. Night shift meets 3rd Thursday of month, 2:30 p.m. Water Ski Club Days meets 3rd Thurs., 7:30 p.m.  
Election April 2.  
April 26, Anchor Drag.

**BOWLING (days), Lloyd Forstrom**  
**BOWLING (nights), Charlie George**  
Spring Doubles Tournament, April 12-13, 19-20 & 26-27. Schedules available at PA&S, 1st week in April.

**BOY SCOUTS, Stan Morris**  
Sea Scouts, Intermediates, Cub Scouts, All Norcrafter boys welcome.

**CAMERA CLUB (days), Steve Marsteller**  
Meet 1st, 3rd & last Wednesday, 7:30.

**CAMPING CLUB, Fred Brant**  
Meet 1st Monday of month.

**FISHING (day and night)**  
Register fish for NRC awards with card available at Personnel Activities.

**GEM & MINERAL CLUB (days), Raymond Cole**  
Mineralogy class now in session. Meet every Thursday, 7 to 9.

**GEM & MINERAL CLUB (nights), Victor Lincoln**  
Meet 1st and 3rd Wednesday of month, 1 p.m.

**GOLF (days), Charles Penegar**  
**GOLF (nights), Leo Baker**  
San Clement Tournament, Sunday, April 13.

**GUN CLUB (days), Carl Turner**  
Meet 3rd Wed. of the month at 7:30 p.m. Pistol shoot at Torrance, 2 p.m., Sunday, April 6. Rifle shoot at Torrance, 1 p.m., Sunday, April 20.  
Election April 16.

**MIXED CHORUS, Bill Porter**  
Meet every Tuesday 7:30 p.m. All Norcrafters welcome.

**MODEL RAILROAD, Jack Wilson**  
Meeting every Thursday evening from 7-10 p.m. in Annex. Visitors welcome.

**PHILATELIC, Robert Van Rensselaer**  
Meet 2nd and 4th Mondays, 7 p.m.  
Election April 14.

**RADIO CLUB (days), Phil Kramer**  
Meet last Thursday of month in Annex, 7:30 p.m. Radio Code Class meets every Wednesday evening, 7:30 p.m. NRC's Station is W6VPZ.  
Election April 24.

**RADIO CLUB (nights), Merwin McGrew**  
Meet the last Thursday of the month, 1:30 p.m.

**SKEET CLUB, Harold Bowers**  
Meet every other Saturday at Long Beach Dominguez Gun Club on Artesia Blvd., 10:30 a.m., March 1, 15 & 29.

**SKI CLUB, William Loomis**  
Outing to Mammoth, April 18, 19 & 20. Meet the 2nd and 4th Wednesdays of the month at 7:30 p.m.  
Election April 23.

**SKIN DIVING (days), Ralph Gonzales**  
Meet 3rd Monday of the month at 7:30 p.m.

**SKIN DIVING (nights), Lillian Kemble**  
Meet 3rd Wednesday of month, 1 p.m.

**SOFTBALL (days), Ken Kleir**  
Practice games start April 21.

**SPORTS CAR CLUB, Bill Hanna**  
Meet 2nd Thursday of month, 7:30 p.m. Election April 10.

**SQUARE DANCING, Roy Jackson**  
Beginners class starting 2nd, 3rd, 4th, and 5th Sundays, Gardena Barn, 15016 Daphne St., Gardena, 3-6 p.m. Regular Sessions 1st, 2nd and 4th Sundays at 8 p.m.

**SURF FISHING, John Pawlicki**  
Meet 1st Tuesday of month, 7:30 p.m.

**TOASTMASTERS 212 (days), John Langdon**  
Meet every Thursday evening, 6:30 p.m., Western Avenue Country Club.

**TOASTMASTERS (days), Howard Cornelius**  
Meet every Monday evening 6:15 p.m., Western Avenue Country Club.

**TOASTMASTERS (nights), Ray Grish**  
"Gondolier", corner of Imperial Highway and Prairie.

## FOR THE LADIES

**BOWLING (days), Joan Sitauer**  
**BOWLING (nights), Mary Minnaugh**  
Spring Doubles Tournament.

**GIRL SCOUTS, Helen Maupin**  
Mariners, Intermediates, Brownies. All Norcrafter girls welcome.

**TOASTMISTRESS, Vicki White**  
Meet in NRC Clubhouse Board Room, 1st and 3rd Thursdays, 7 p.m.



## Snark to Tour Nation

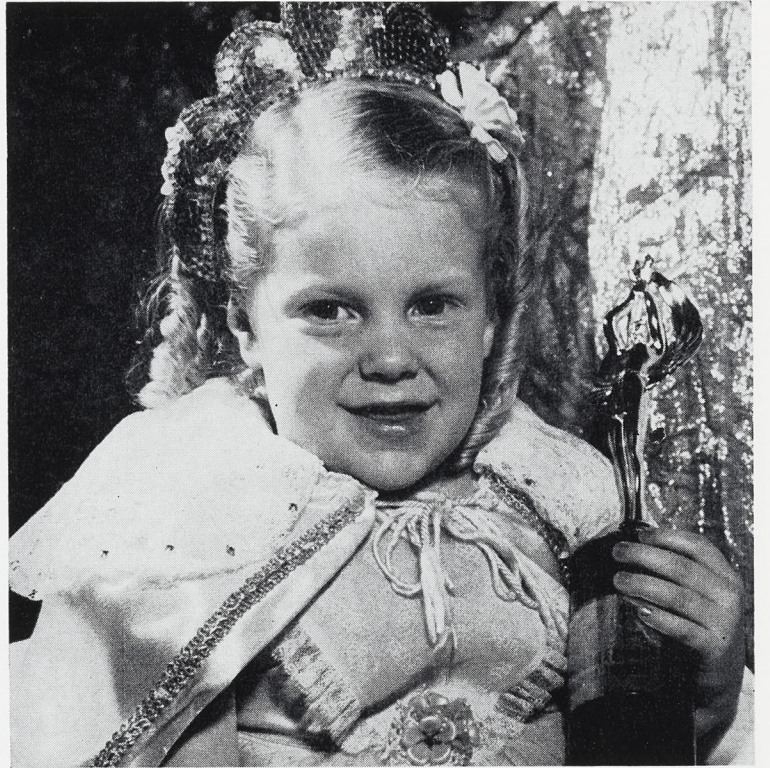


## Northrop News Pictorial

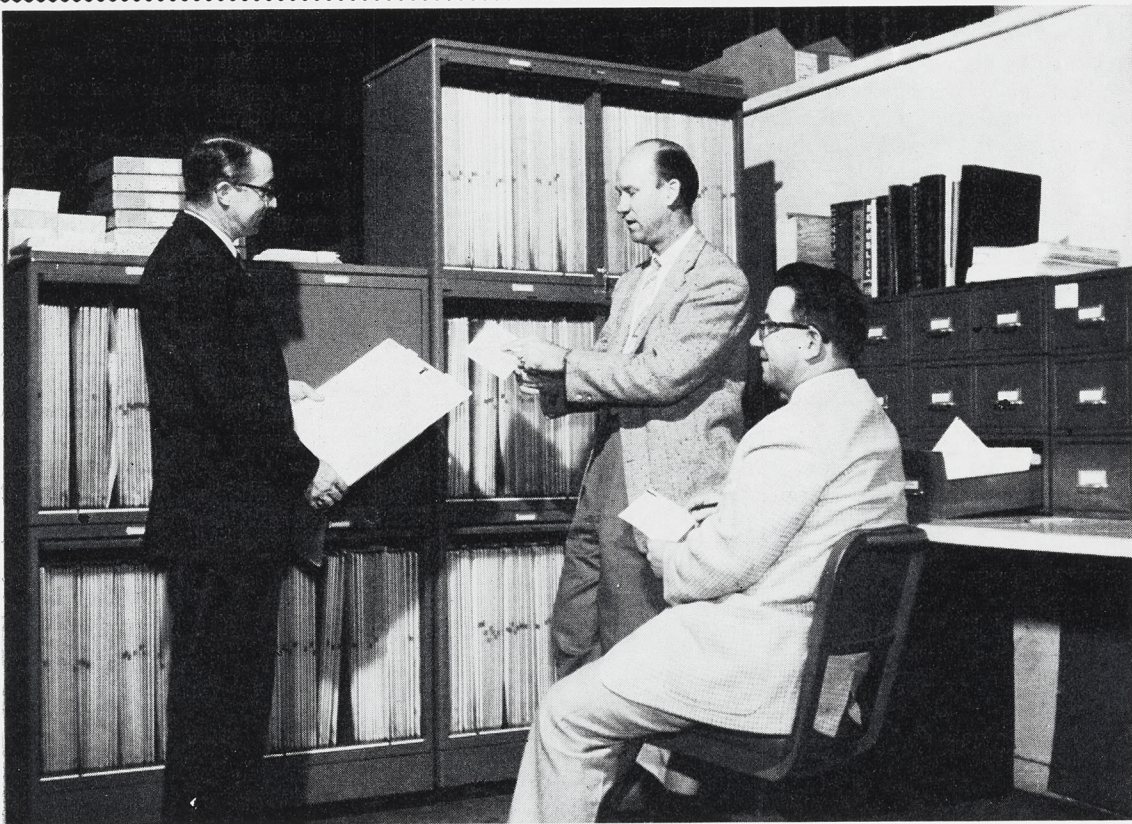
**DISPLAY SNARK**—Following dedication at Space Age Conference (see story Page 1), this full-size model of

the Northrop Snark will be displayed on a nation-wide tour by the AF Orientation Group. The Group, headed by Major Richard F. Hum, above accepting delivery from Northrop's Tom Blair, will exhibit the Snark at trade and civic fairs, on TV, at schools and colleges, and special Armed Forces demonstrations and displays.

## Top Honors for Cindy



**TRIPLE TIARA**—Cindy Lu Phillips, whose proud father is Marshall Phillips, Manufacturing Tool Liaison, amassed three awards in Little Guys and Dolls contest sponsored by Disabled American Veterans Inglewood Auxiliary 30. Three-year-old Cindy Lu, crowned Inglewood Supreme Queen, also won top honors in both beauty and health for age group. Contest covered 12 Southland cities.



**SIMPLIFIED STOCK CATALOG**—A completely revised Industrial Supplies and Equipment catalog now in Corporation-wide use marks the beginning of a simplified and more economical system for filling the needs of all Northrop departments. Focal point of the new system is the Materiel Division at Mariposa where the catalog is maintained. Keeping the catalog up-to-date is the responsibility of trio above, from left, Don Riddle of Materiel Operations; Bill Pike, value analyst of the Procurement Research section; and Russ Black, cataloging clerk. Alphabetical listings, uniform description and standardization of items are among the features of the improved catalog.

## Improved IS&E Catalog Now In Use

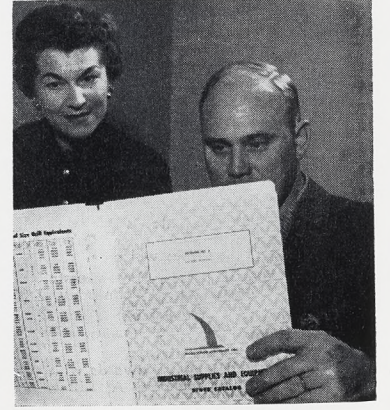
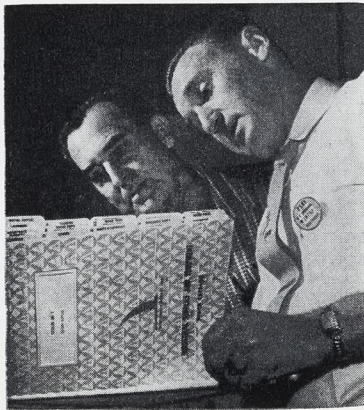
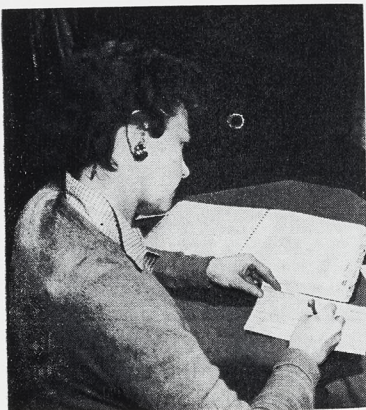
**AT RADIOPLANE** — Using new catalog, from left, Gene Carpenter, staff assistant to director of Materiel; Diana Traina, Procurement; and Walt Mann, Materiel Control manager.

**NORTHROP DIVISION** — Boeing Wing department clerk Penny Tittel prepares material requisition using new catalog. She orders for both shifts, says new system makes job much easier.

**NORTRONICS** — Red Sheehan, right, supervisor; and Enoch Taylor, dispatcher, Nortronics Project Control, check catalog for plastic bags used to protect delicate electronic instruments.

**BEVERLY HILLS** — Secretaries Arline Ellis, left, and Reba Turner, of the Corporate headquarters handle requisitions for office stationery and forms, favor new catalog's alphabetical listings.

**AT ANAHEIM** — Clare Farrell, Materiel Control clerk; and Jerry Zahrt, general foreman, Warehousing; of Nortronics System Support facility, approve of the uniform description of items.



**DIAMOND EXHIBIT**—Members of the NRC Gem and Mineral Club recently viewed an imposing diamond display when guest speaker, Mrs. Gladys Hannaford, addressed the Club on the precious gems. Above, from left: Joy Fugate, Naomi Cole, Mrs. Hannaford, A. C. Henschel and Bill Punawai. Large gems on display are replicas of some of the world's most famous diamonds.



# Company - wide Share in America Bond Campaign Starts April 14

The whys and wherefores of Savings Bonds purchases get top billing for the two weeks beginning April 14.

The Company-wide campaign to enlist Norcrafters as holders of "shares in America" is in conjunction with the national spot-

light on U.S. Savings Bonds and the personal benefits to purchasers.

With Savings Bonds currently paying the highest interest in history, each Norcrafter would find it worthwhile to check his budget allotment for savings and establish a regular program or increase his present one.

One of the most beneficial features of the Savings Bond payroll plan is the setting aside of funds at definite periods—whether the amount be large or small. To facilitate these programs, there is no minimum deduction.

Currently, 51 per cent of all Norcrafters are Bond-buyers through the payroll plan. Department clerks are banner-bearers in the drive to increase this (See BOND DRIVE, Page 3.)

## President Collins Says—

The opportunity to share in America is a priceless privilege. To share means more than just to receive or possess; it also means to be equally concerned and to participate.

Within the next few days you will be given an opportunity to share in America through the regular purchase of Savings Bonds by the Payroll Savings Plan.

These shares in America will help to provide funds to strengthen our nation's power for peace.

Payroll savings is not a deduction. The money you save is yours, with interest, when you need it. It is an automatic savings plan, backed by the full faith and credit of the U. S. Treasury, administered as a service to all employees by Northrop and at no cost to you or to the government.

Your participation in the future of America is also the guarantee of your own future prosperity and happiness.

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, April 9, 1958

## Snark School Marks USAF's First Global Missile Training Program

Latest milestone in the Snark program was marked March 25 when the U. S. Air Force dedicated its first intercontinental guided missile training school at Amarillo AFB, Texas.

The school will individually train technicians who will man units armed with the Snark SM-62, the nation's first successful intercontinental missile.

Major General Carl N. Brandt, deputy commander of the Air Training Command, with headquarters at San Antonio, Texas, gave the dedicatory address at

the ceremony. Also participating were Major General Wiley D. Ganey, Gulfport, Miss., commander of the Technical Train-

ing Air Force, and Brigadier General Wm. L. Lee, commander of Amarillo.

(See AF SNARK, Page 3.)

## Northrop Management Club To Hear Robert R. Miller

Principal speaker at the Northrop Management Club annual installation dinner April 11 will be Robert R. Miller, Corporate vice-president and general manager,

Northrop Division.

Mr. Miller will discuss details of the Company's current and future design and manufacturing programs. This will be the first time that he has addressed the Club as principal speaker, according to Al Kendall, outgoing president.

"As top executive of the Northrop Division and member of Northrop's board of directors, Mr. Miller's remarks will be of major interest to all Management (See MANAGEMENT, Page 2.)

## Sign of Things to Come



**FOCAL POINT** during the first Western Space Age Conference at Shrine Auditorium recently was huge revolving Nortronics' display suspended over the speakers table. Addressing conferees, above, is Army missile expert Wernher Von Braun. See News Briefs comment, Page 2.

## NORTHROP

## NEWS BRIEFS

**AUSTRALIAN VISIT**—"Australia is very interested in the N-156F counterair fighter project," stated General Manager Robert R. Miller, back from a recent visit to that country. "They are confronted with the same necessity of seeking the most economical solutions to their defense needs. And, it was in view of this that we surveyed the country's aircraft and electronics industry to determine the capability for producing the N-156F in Australia under license. As a result of this visit, we learned that Australia does have the capability. We met and conferred with officials of the government, military and industry, many of whom had visited Northrop on earlier occasions. Everywhere we went—Melbourne, Sydney, Canberra, and Adelaide—the Australians accorded us a very fine reception. With me were Gil Nettleton, vice-president and general manager, Northrop International; Mike Creamer, chief, Manufacturing Program Planning; and Art Ogness, supervisor, Design Analysis."

**REPORT FROM AMARILLO**—Upon returning from dedication ceremonies for the Air Force's Snark Training School (separate story, this page) at Amarillo AFB, Texas, Al Morgan, vice-president, Contracts, stated that this new program represents the finest type of cooperation between the Air Force, Air Training Command, officials at Amarillo AFB, and Northrop. He pointed out that Northrop outlined the facility requirements and selected the buildings to be used for the school. "Then the Air Force renovated the buildings to our specification—a huge hanger for the Snark missile, specialized laboratory rooms, classrooms, and an auditorium. Everyone is proud and enthusiastic about the school," Mr. Morgan reported. "Our people have done a fine job."

**NEW R&D CONTRACT ON SNARK**—Negotiations on a new R&D contract for the Snark program were successfully completed at Wright Field last week.

**TEST VEHICLE PROJECT**—Northrop has submitted a major proposal on an AF manned test vehicle project, it was announced by George F. Douglas, vice-president, Engineering. The test vehicle would operate at the border of orbiting space flight. Welko Gasich, chief Weapon System Development Engineer, pointed out that Northrop has conducted research in this field for more than two and one-half years and was invited to submit the proposal along with other prime contractors. In the proposal are both the technical and management phases of the program.

**FIRST T-38 SLED TEST**—The first of a series of high-speed runs to check out the T-38 crew escape system was termed generally successful by Stan Erbeck, T-38 project engineer. Second high-speed run on the Edwards track is slated 11 April. Based on results of the first test, it appears there probably will be no major difficulties during the remaining runs, Erbeck stated.

**LONG-RANGE PLANNING**—Functions of the newly formed Product Planning group, under the direction of Herb Weiss, have been established and approved. "Task of this group," he stated, "will be one of analysis and evaluation of advanced project requirements. This will put product development in its proper perspective." Weiss pointed out, "We will not invent a product, but will recommend areas where products are needed so that other elements of Engineering can come up with the best answers. This approach will facilitate coordination among all agencies because, after all, no single small group can claim a monopoly on ideas." As the Product Planning group deals with a particular need, he explained, it may call upon the assistance of other groups—Customer Relations or Manufacturing for example—in furnishing supplemental studies. "One of the advantages of the Product Planning effort will be

(See NEWS BRIEFS, Page 2.)

## Nortronics Develops Star Tracking Device For Space Vehicle and Missile Guidance

An automatic star tracking device which can be used in space vehicle and missile guidance systems has been developed by Nortronics.

The new device can track stars during broad daylight as well as during the hours of darkness.

Announcement of its development was made by Fred Stevens, operations manager for the Nortronics Electronic Systems and Equipment facility.

"While the stars serve as man's most accurate navigational references," he said, "they have heretofore been useful only during the hours of darkness. Now they may be used throughout the full 24-hour period, even during periods of high sky brightness."

The Nortronics tracker locates navigational stars electronically. Background sky brightness,

which makes stars invisible to the naked eye, does not affect the sensitive elements of the tracker.

It is capable of tracking a wide range of navigational stars including many which are fairly close to the sun.

The tracker can be used in automatic navigation systems for missiles and interplanetary vehicles, Stevens pointed out. It can serve as part of an automatic celestial navigation system or as a monitoring instrument for inertial guidance systems which use a gyro-stabilized platform as the prime navigational reference.

While design details of the Nortronics star tracker remain classified, the unit has been fully proven during flight tests in both manned aircraft and missiles.

The tracker was described by Stevens as one of the recent tech-

nological achievements by Nortronics in the field of automatic guidance and control for both terrestrial and interplanetary missiles.

## New Procedure For Disability Insurance Pay

Norcrafters are now paid disability insurance benefits through the State of California, it was announced by John B. Clark, director, Industrial Relations.

He pointed out that recent changes in the State Insurance Code which increased the benefits made it advisable to transfer administration of the plan to (See DISABILITY, Page 3.)



## Perfect Safety Records Win Top Honors For LAX, Edwards; Mariposa Safety Cited

Two perfect safety records for 1957 have won National Safety Council honors for Northrop's LAX and Edwards AFB facilities, it was revealed by Lee B. Johnson, chief safety engineer.

This marks the second successive year that these facilities have been honored for perfect safety

records, Johnson stated.

The Materiel Division at Mariposa received a first-place award from the Los Angeles Chapter of the National Safety Council for the lowest accident rate in the warehousing category for aircraft companies.

The awards were presented at

the fifth annual Western Safety Congress and Exhibit held at the Ambassador Hotel recently.

Accepting the awards were Jack Farley, Edwards base administrator; Chuck Gilbert, LAX base administrator; Harold Peterson, LAX, and Johnny States, warehousing superintendent, Mariposa.

Northrop also sponsored attendance to the Congress of some 100 key supervisors. They participated in safety sessions designed for supervisory personnel.

Other representatives attending the awards presentation from Northrop included Milt Kuska, chief flight test engineer; John Breneman, assistant factory manager; and Lee Johnson.

### MACHINE TOOLS GAIENNIE TOPIC FOR UCLA FORUM

Barney Gaiennie, Northrop's chief of Manufacturing Research and Development, will discuss the present and future effects of numerically controlled machine tools on engineers and management in a free public lecture on the UCLA campus tonight.

Gaiennie will speak on "Computers, Machine Tools and Productivity," as part of the 13th annual Industrial Engineering and Management forum series, sponsored by the University of California Extension and the American Society of Mechanical Engineers.

His lecture will summarize existing systems for linking the computer and the machine tool. He will speak in room 147 of the Business Administration Building, UCLA main campus.



**SAFETY AWARDS**—On hand for presentation of awards were, from left, John Breneman, John States, Lee B. Johnson, Max Kauffman, vice-president of the National Safety Council, Jack Farley, Pete Peterson, Chuck Gilbert, and Milt Kuska. Northrop's LAX, Edwards and Mariposa facilities were cited for top safety records over the past year.

## Letters Praise Community Role Of Former Palmdale Norcrafters

Letters of warm praise and regret from civic and industry officials throughout Antelope Valley sounded the parting note as Northrop closed out its Palmdale facility last month.

The numerous expressions directed to Tom McCracken, former base administrator, are indicative of the friendly relations established in the desert communities by Palmdale Norcrafters.

W. J. Valentine of the Ledger-Gazette wrote, "We express our admiration and appreciation for the part you and your company have played in the growth and development of Antelope Valley."

"You have supported our Community Chests and all our fund drives. You have gone out of your way to support our Chambers of Commerce, our Progress Association and our Mobilization Defense Service Committee. You

have indeed been good Antelope Valley citizens."

Pacific Tel & Tel manager, G. R. Jenner, stated, "You and Northrop will be sincerely missed in our personal and community life here in Palmdale. We feel it has been a real privilege to have been associated with you."

### M-C MEMBERSHIP TO HEAR MILLER AT INSTALLATION

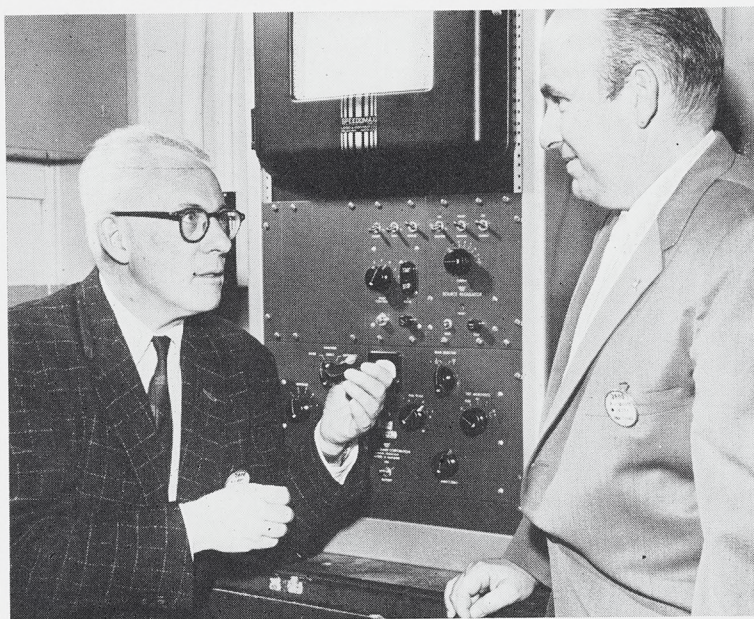
(Continued from Page 1)  
Club members," Kendall said.

The Club's installation dinner will be held at the Rodger Young Auditorium. Officers to be installed hold key positions in Northrop and Nortronics Divisions.

Charles A. Davis, supervisor, Fabrication Planning, will take over the club presidency, succeeding A. H. Kendall.

Other officers to be installed are Howard D. Childers, supervisor, chemical section of Materials and Process, as vice-president; Carl F. Emerich, shift head, Nortronics Quality Control, as night shift vice-president; E. D. Kinsey, assistant chief accountant, Accounts Payable, as secretary; Elmer J. Noonan, supervisor, Nortronics Wage and Salary, as treasurer; and Leo Richman, manager, Records Management, Administrative Services, as sergeant at arms.

## Noted Infra-red Scientist



**NOTED SCIENTIST JOINS NORTRONICS**—Dr. Roger S. Estey, infra-red specialist, confers with Norman P. Lavery, Advanced Development supervisor, regarding Estey's assignment to Electronic Systems and Equipment technical staff. Dr. Estey, holder of Colgate and NYU degrees, will conduct advanced infra-red research.

**Northrop News**

Vol. 16 Northrop Field, Hawthorne, Calif. No. 14

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CHARLES BRADFORD, Editor

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## NEWS BRIEFS

(Continued from Page 1)

the advanced notice on anticipated and future projects so that we can tune in all elements to develop Northrop's capability for handling the projects," Weiss noted.

**BOEING 720 PROGRAM**—A team of Northrop people held discussions with Boeing in Seattle, Washington, on production plans for Boeing's all-jet Stratoliner 720 series. At the Seattle conference were Arch Wallen, factory manager, Bob Lloyd of Manufacturing Engineering, Bob Reed and Ed Robinson of Contracts, and H. L. Cook of Engineering.

**METHODS ENGINEERING** — Manufacturing Vice-President Richard R. Nolan reports that "real progress is being made through the increased application of methods engineering to problem areas in manufacturing." As a result, broader application of methods to all manufacturing and materiel operations is contemplated. "Aim," he said, "is to achieve the most effective use of human skill and effort by applying modern, scientific management principles." What happens is this—first step is an analysis of a program from the standpoint of what it will take to build the product, tooling required, cost standards, etc. This is handled by the Manufacturing Engineering function, Bob Lloyd, chief. Next comes the refining of the original plan. "It's a historically proven fact of life that the first plan is not always the best in every respect," Mr. Nolan noted. "Thus, it is necessary to follow up on methods application to improve the program, attain optimum manning. Combined with the economical considerations in achieving greater effectiveness of effort is the greater sense of accomplishment for everyone contributing this effort."

**NORTRONICS**—Trips to Washington and New York were made by Dr. William F. Ballhaus, general manager; and Fred S. Stevens, operations manager, ES&E facility. While in Washington, they looked over the AF's Air Research and Development Command's plans for the future and noted several areas where Nortronics' capabilities could contribute to the AF projects. "Officers of ARDC," Dr. Ballhaus said, "were extremely receptive and made specific helpful suggestions concerning Nortronics' participation in future programs."

**T-38 JET ENGINES**—Delivery schedule on J-85 power plants for the first T-38 airplanes has been confirmed to dovetail with Northrop's contract delivery schedule. Recent meeting between officials of the Air Force, Northrop, and General Electric, producers of the new and smaller light-weight jet engines, was held here to review configuration, engine specifications and availability status.

**SPACE AGE CONFERENCE**—Participation in this timely conference by the nation's leading scientists, industrial, government and military officials served to indicate that Los Angeles is not only the center of the aircraft industry, but is also developing as a major center of the space industry. Attendance by such eminent authorities as Caltech's scientists Dr. DuBridge and Dr. Pickering, the U. S. Army's missile expert Wernher Von Braun, the AF's materiel chief General Irvine, and Northrop's Dr. Ballhaus, among others, emphasized the high degree of interest focused on the space age activity in the greater Los Angeles area.

**WEAPON SYSTEM PHASING GROUP** — Officials from the USAF Weapons Systems Project Office and from major commands converged at Northrop recently for a Weapon System Phasing Group meeting on status and progress of the T-38 program. Specific emphasis during the one day meeting was on review of each agency's part in the T-38 program to insure that all action required to keep the project flowing smoothly and on schedule is taken by each agency concerned.

**PALMDALE CLOSE-OUT** — The Palmdale facility was closed out on schedule and turned over to Douglas Aircraft at the end of March. Vice-President Richard R. Nolan stated that the close-out team under the direction of Tom McCracken did an outstanding job.

### DOUGLAS TO AIA TECH COMMITTEE; OTHER NORTHROP ENGINEERS NAMED

The appointment of George F. Douglas, vice-president Engineering, to the Aircraft Industries Association aircraft technical committee was announced this week.

Following his appointment, Mr. Douglas named four top Northrop engineers to serve on AIA subcommittees.

They include George N. Mangurian, chief analytical engineer, for airworthiness requirements; Royal B. Jackman, chief, Engineering Laboratories, for aircraft research and testing; John A. Van Hammersveld, chief, Producibility Engineering, for national aircraft standards; and Ralph D. Hampton, supervisor, Engineering Specifications, for engineering contract requirements.

Also announced by Mr. Douglas was the election of Charles

Eyres, supervisor, Engineering Education, by the Institute of Aeronautical Sciences to the career development committee.

### IAS April Program Features Two Talks

"Los Angeles International Airport Prepares for the Jet Age" is the topic of tonight's Institute of Aeronautical Sciences meeting.

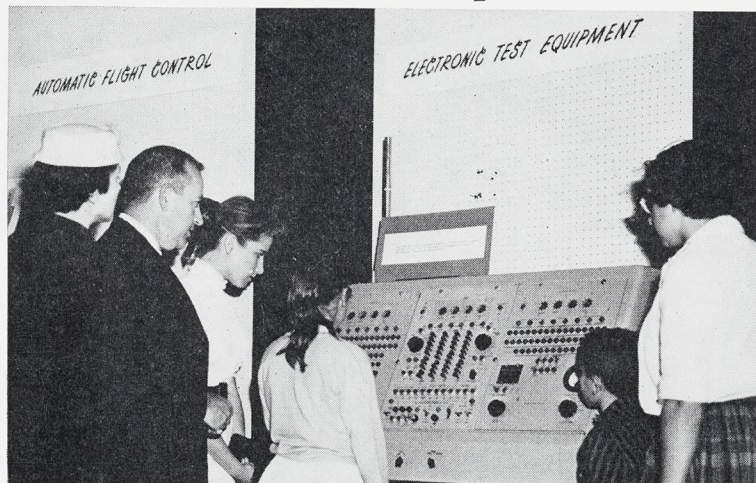
The evening's speakers are Don Belding and Donald Wilcox, both of the International Airport.

The meeting on April 22 features a lecture by Peter Wegener of the Jet Propulsion Lab, California Institute of Technology, on "Experiments on Chemical Kinetics in Supersonic Flow".

Both meetings will be held at the IAS Building, 7660 Beverly Boulevard, Los Angeles.



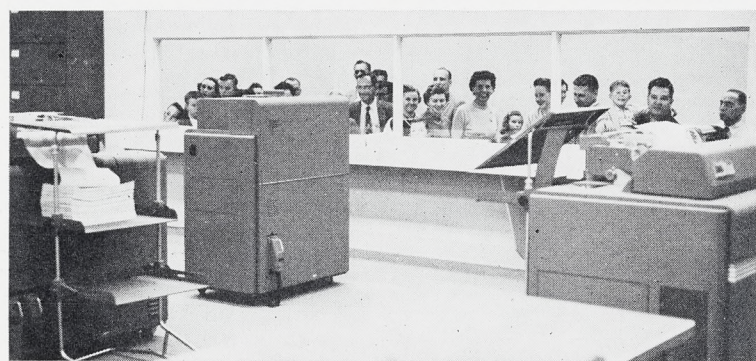
# Engineering Open House Attracts Throngs of Norcrafters



**ELECTRONICS DISPLAY** captures attention of George Douglas, vice-president, Engineering, and his family. Divisional exhibitions covered wide scope of activities.



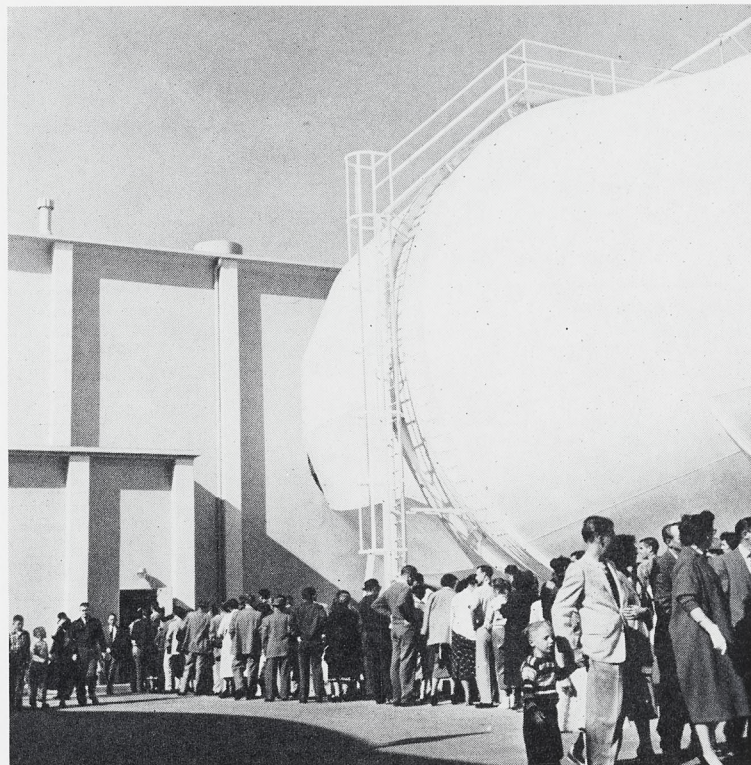
**CAFETERIA ART GALLERY** draws commentary by Harry Clark, Personnel Activities.



**DATAMATION** is theme of Computer Center, above. Below, giant "clamshell" arrests sightseers at Environmental Test Building.

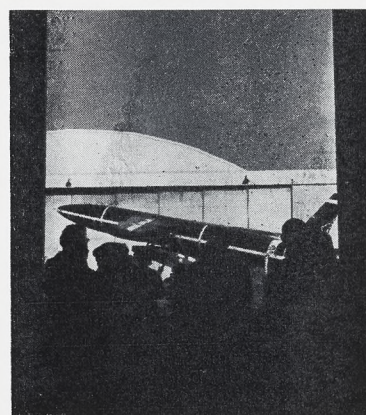
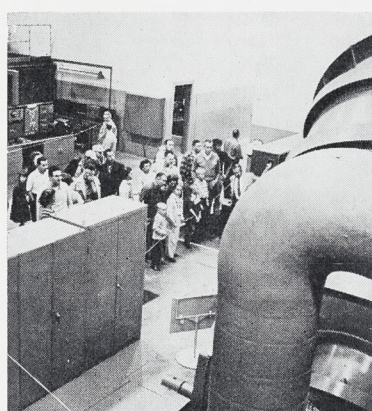


**TYPICAL** of Open House is Welko E. Gasich, showing family his daily bailiwick.



**MOCKUP** of T-38, below, shares stage - center with Radioplane drone. Visitors converging at Product Display Building were also rewarded by view of Hawk.

**WIND TUNNEL** queue expresses infectious appeal of this facility. George Douglas stated that large Open House turnout amply evidenced gratifying interest and pride held by Norcrafters. Below, Snark, framed by Engine Test Cell doorway, was symbolic climax of science center tour.



## Suggestion \$ Awarded for Savings Idea

What's in a name?

Economy: thrifty and careful administration; management without loss or waste; prudent and sparing use of means to an end.

Norcrafters Dick Economy of Quality Control department lived up to his name. He suggested a way to save valuable inspection time in filling out by hand—sometimes as many as 150 a week.

A nine-year Norcrafters, Dick studied the check lists. They had to be filled out by hand—sometimes as many as 150 a week.

His suggestion—why couldn't all those entries common to each item be printed on the check list beforehand? He tried it for 30 days, typed the check list, made ample carbon copies. The result was a saving of approximately four minutes on each check list. Over the weeks, months and longer, this spelled savings in time and money.

Next step was to submit the idea to the Northrop Suggestion Award Committee for consideration. The idea checked out as Dick had said it would. Now revised sheet metal inspection check lists are in use.

## AF Snark Training Program Underway at Amarillo AFB

(Continued from page 1)

Representing Northrop were Al Morgan, vice-president, Contracts; Lee H. Smith, director, Customer Service; Dr. J. N. McClelland, manager, Customer Training; and Ralph Quinn, resident manager of the Snark School.

Some 200 Air Force personnel are enrolled in the around-the-clock training program. The first classes are being trained by Northrop instructors and technicians working under contract to the Air Force. Courses are divided into 14 separate phases of Snark operations, and vary in length from two weeks to six months.

Upon graduation airmen will be able to perform maintenance and repair on all elements of the Snark and to perform all launching operations.

Following completion of training at Amarillo, the majority of the airmen will remain as resident instructors. Others will be returned to O.O.A.M.A. and to other bases from which they were assigned to the school.

Northrop instructors assigned to the school are the same group which trained the pioneer class of Air Force Snark specialists who were graduated last December 17 at ceremonies here. Members of that class are now receiving

additional instruction at the Air Force Missile Test Center, Cape Canaveral, Florida.

### AFA SETS SPACE AGE SYMPOSIUM IN LOS ANGELES

Missile Blastoff is the keyword of the Air Force Association California Wing 10th Annual Convention at the Hotel Statler.

The Missile and Space Age Symposium will be launched at 2:30 Saturday, April 26, by "Aircraft to Spacecraft", the topic of Dr. George E. Valley, Air Force chief scientist.

Col. Otto J. Glasser, Col. B. P. Blasingame and Lt. Col. R. K. Jacobson, Ballistic Missile Division, ARDC, will cover developments on the Atlas, Titan and Thor missiles, respectively.

"Employment of Missiles" will be outlined by Major General David Wade, commanding general of 1st Missile Division (SAC), Camp Cooke.

Earlier in the day, luncheon will hear Dr. Hugh L. Dryden, director of the NACA, speak on "World Peace Requirements".

The remainder of the three-day program, Friday through Sunday, includes the Reserve Affairs Symposium and the Awards Banquet special events.

## State Handles Norcrafters' Disability Pay

(Continued from page 1)

the State. Previously, disability insurance benefits were paid through the voluntary plan carried by Prudential Insurance Company.

A completely detailed pamphlet which explains how the plan works was distributed to each Norcrafters on Friday, March 28. The new plan became effective April 1 but does not affect Norcrafters working in states other than California.

Only change in the Northrop group insurance program as a result of changeover is the hospital benefit. Under the new plan the state will pay the first \$12.00 of room and board charges for 20 days. Group insurance will pay \$8.00 per day to total the \$20.00 now being paid.

It was pointed out that under the California Unemployment Insurance Code, disability insurance is payable when you cannot work because of sickness or injury not caused by your job.

As of January 1 when the benefits were increased, payroll deduction for cost of the plan was set at one per cent of the first \$3600 of annual earnings. See Northrop News, March 12, for earlier story on deductions.

## Bond Drive—

(Continued from page 1)

figure to 75 per cent.

Tangible tribute for the clerks' efforts will be prizes—anywhere from one to five—for the lucky gals whose names are chosen in drawings during the progress of the campaign.

As Norcrafters payroll pledges are upped to 55 per cent, the award will be an outdoor barbecue with electric spit. A rise to 60 per cent occasions the drawing for a Philco transistor radio in a leather carrying case.

Incentive for 65 per cent is a Hoffman transistor Solaradio, one which recharges itself in the sun, and for 70 per cent—a Polaroid 800 Land camera.

If the 75-per cent goal is attained, all participating department clerks will have an opportunity to win the fifth and sweepstakes prize, a Philco hi-fi record player-AM-FM console.

### Flight Fire Hazard Safety Meet Subject

In-flight fires and explosions were discussed at the 33rd Air Force—Aircraft Industry conference, concluded March 20.

Representing Northrop were W. L. Collins, general supervisor, Propulsion; O. E. Grahous, air safety engineer, Norton AFB; L. A. Nelson, Engineering chief test pilot; and V. D. Iglesias, supervisor, Propulsion Systems Conditioning.



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

FRYER, electric, \$15. HA 1-5431. A  
CORVETTE, 1954, \$1500 & assume payments totaling \$500. FR 2-4457. A  
HI-FI EQUIPMENT, extension speaker & cabinet, 12" bass, 5" treble, \$28. OR 1-6422. A  
PLYMOUTH, 1948 Special Deluxe, \$160. RE 1-8067. A  
MAGAZINES, World War 2 aviation, approx. 50 issues. FR 5-6400. A  
TRAILER, Travelite 27', sleeps 4, 4-burner stove, electric ice box, oil heater w/fan, inside plumbing, \$650. OS 9-1231. A  
CAMERA, Arqus C4, flash, filters, self-timer, tripod, extra lens, light meter, transparency box, case, \$95. PL 6-0433. A  
MOVIE CAMERA, Keystone 8 mm, F1.9 lens. \$30. OS 5-2491. A  
RANGE, Tappan gas, 2 yr old, griddle, clock, timer, oven window, \$125. GE 1-0768. A  
MGA, 1957 roadster, fully balanced engine, lightened flywheel, extras. AX 4-7354. A  
FORD, 1956 Ranch Wagon, T-bird engine, \$1495. FR 5-8087. A  
SKI BOOTS, woman's size 8, \$10. FA 8-0482. A  
IRONER, Ironrite automatic. FR 9-5144. A  
REFRIGERATOR, Servel gas, 9 cu ft. \$35. FR 9-2774. A  
WASHER, Thor automatic. OR 8-9701. A  
BOAT, 12' Fiberglass, Glenn L design, w/controls, trailer & Mark 20 engine. OR 7-3275. A  
APPLIANCES, refrigerator, 7.5 cu ft, \$90; stove, Wedgewood, \$50; washer, G.E. wringer-type, \$35. Box 1401. A  
FORD, 1951 V8 Custom 4-dr sedan, Ford-O-Matic, extras, \$295. OS 6-0400. A  
RANGE, electric, Frigidaire, 4-element, automatic oven, installation & wiring included, \$50. FR 7-1480. A  
HOUSE, 4-bdrm, frame, w/w carpeting, disposal, trees, 50x220 lot, mixed area, near Main & Imperial, \$10,950, \$795 down. PL 7-2719. A  
SEWING MACHINE, Adler 152 portable, zig-zag & other attachments, \$115. FR 4-6003. A  
REFRIGERATOR, Coldspot, 9.5 cu ft, \$50. GA 3-3892. A  
TRAILER, Kaumann Starfire 15' camping-type, sleeps 5, butane light, oven, water tank & pump, \$595. OS 6-3110. A  
APPLIANCES, Frigidaire Imperial 1958, washer & dryer, \$385. GE 9-8661. A  
TV REMOTE CONTROL, Remot-A-Matic, \$25. FR 2-2915. A  
RUG, 12'x15' beige & brown tweed, viscose, pad. OR 4-9931. A  
FURNITURE, radio-phonorecorder, Packard-Bell; tables, 2; kitchen set, chrome; vacuum cleaner, Kenmore; heater, electric, \$50. AN 1-0488. A  
ENCYCLOPEDIA, American International, 16-vol set, \$50. DA 4-2394. A  
RANGE, Florence gas, 40", 4-burner, oven & broiler, 2 storage drawers, \$45. OL 6-0753. A  
WASHER, Kenmore wringer-type, apt-size, timer, \$10. OS 9-2327. A  
RUGS, 2, Chinese hooked, 8'x10' & 12'x18', green background, floral design, w/pads, \$100. HA 1-4340. A  
FORD, 1955 Fairlane hardtop, power equipment, Ford-O-Matic, 2-tone, assume payments totaling \$1478 including interest & insurance. FR 2-8206. A  
FIREPLACE GAS LOGS, \$25. DA 4-7019. A  
STOVE, table-top, white, \$20. OR 2-6625. A  
FURNITURE, rocker, platform-type, \$12; chair, wing-back, \$10. PL 4-1886. A  
ENCYCLOPEDIA, American Peoples, w/children's set, 12-vol great literary works & bookcase. EA 2-3665. A  
RANGE, O'Keefe & Merritt 36", broiler, storage space. PL 9-0021. A  
CADILLAC, 1951 2-dr 61 sedan, going into service, equity \$200 & assume payments of \$51 mo, totaling \$619. OS 5-3741. A  
FURNITURE, davenport, red leather, \$20; baby chest, \$10; dining table, large, \$15; music chest, \$10; chairs, \$5 ea. FR 2-9051. A  
LOUNGE CHAIR, rose, down cushion, ottoman. AX 4-9294. A  
PUPPIES, boxer, 2 mo old, AKC, Banq-away & Dickory Dude strain. EX 6-4962. A  
KAISER, 1947 4-dr, \$65. TE 3-4191. A  
ENCYCLOPEDIA, Britannica, 24-vol set, year books, case, \$175. OS 5-0867. A  
HOUSE, 4-bdrm, 3 yr old, top of Hollywood Riviera, view, \$28,950, refinance for \$20,000. FR 5-1272. A  
FURNITURE, table, chairs & pad, Duncan Phyfe, \$250; sweeper, Kirby, 1 yr old, attachments, \$100. OS 6-6869. A  
FURS, Bon Martin, 4 skins, hi appraisal, \$50. PL 5-6509. A

## FOR SALE

BOAT, Cris Craft 14', glass bottom, controls, Mercury Mark 20 engine, tilt trailer, equity \$150. FR 4-5844. A  
APPLIANCES, refrigerator, Servel 1951, 11 cu ft, crisper, \$60; mixer, Dormeyer, attachments, \$20. DA 3-4580. A  
CLOTHESLINE, umbrella-type. FR 5-3149. A  
MOTORCYCLE, 1956 Triumph Tiger Cub, 200 cc, \$350. ME 3-3500. A  
CADILLAC, 1947 convertible, new tires, brakes, top & trans., overhauled engine, \$250. PL 4-7861. A  
TIRE CHAINS, 7.10x15, cost \$16.50. PL 4-1080. A  
HOUSEHOLD FURNISHINGS, bathtub; bunkbeds, 2, w/mattresses; doors, 2; headboards, 2, twin-size, padded, plastic-covered. OS 6-6021. A  
PONTIAC, 1950 2-dr, \$299. PL 4-1596. A  
AUXILIARY SLOOP, 18', 6' beam, sleeps 2, teak & oak construction, copper fastened, lead keel, 10-hp Johnson engine w/2 gas tanks. DA 3-5090. A  
BEDROOM SET, Jenny Lind maple, twin beds, box springs & mattresses, chest, \$50. HA 1-1984. A  
TRIUMPH, 1954, tonneau cover, \$1600. AX 4-7356. A  
IRONER, Conlon, \$60. FR 5-5144. A  
HOUSE, 3-bdrm, 1 1/2 baths, w/w carpeting, drapes, fenced, 2-car garage, Anaheim, 4 1/2% loan, low down, \$13,750. KE 3-2455. A  
FURNITURE, sofa, \$12; large table & 6 chairs, \$12; mattress & box springs, Simmons, \$45; bedroom set, 9-pc modern, \$60. PL 7-2719. A  
REVOLVER, H&R .22, double action, 9-shot, \$15. FR 9-0941. A  
FURNITURE, dinette set, 5-pc chrome & green plastic, cost \$108, \$35; trailer divan, red print upholstery, \$25. PL 8-8641. A  
TV SET, RCA color 21", mahogany, \$350. OR 7-3788. A  
REFRIGERATOR, G.E. Box 1406. A  
TRAILER, 2-wheel, 4'x8'x4', spare wheel, 8'x12' tarp. DA 9-8288. A  
RANGE, Wedgewood, 1 yr old, chrome top, center grill, oven, timer, rotisserie, \$95. Box 1407. A  
PLYMOUTH, 1952 Cranbrook 4-dr, \$250. OR 1-3416. A  
TRAILER, 4x8 box-type, \$80. OS 5-9740. A  
PIANO, Mason & Hamlin spinet console, mahogany, \$975. AX 3-9215. A  
TRAILER, 3-wheel, front wheel cranks up or down, all-metal base, built-up 5'x7' stake body, cost \$150. EM 6-8649. A  
SPORTSMAN TOP, factory-made for 1957 Ford 1/2-ton pickup, insulated, mahogany-lined, \$250. OS 6-2435. A  
REFRIGERATOR, electric, large, \$50. FA 8-8247. A  
LA SALLE, 1929 convertible coupe, 1928 Cadillac engine, \$200. OR 2-7670. A  
RANGE, Western Holly 36" gas, grill, oven broiler, storage area, \$35. FR 6-0645. A  
HOUSE, Pacific Palisades, view. Box 1405. A  
PONTIAC, 1951 Catalina, stick-shift, must sell. WE 8-8325. A  
PLYMOUTH, 1953 Cranbrook. TO 6-5438. A  
SURVIVAL EQUIPMENT, rubber life raft, 2-man, \$25; parachutes, 2 seat-type, \$20 ea. EA 2-4508. A  
THUNDERBIRD, 4-dr, white, black & white interior, hi-fi radio, Cruise-O-Matic, extras, \$4200. OS 6-4221. A  
AQUARIUMS, 2 15-gal, 2 5-gal, hoods, heaters, thermometers, feeding rings, rocks, pumps, filters, maintenance equipment, in 54x48x20 room divider & bookcase. TE 4-8215. A  
OLDSMOBILE, 1950 4-dr 88 sedan, \$250. OS 5-5055. A  
CAR EQUIPMENT, MG tools, complete set; elect. fuel pump. OS 5-7831. A  
DINETTE SET, Monterey-type, table & 4 chairs, new paint, \$15. FR 2-8148. A  
STUDEBAKER, 1952 Champion, one owner, must sell, \$200. FR 2-1005. A  
BICYCLE, Goodrich girl's, sidewalk-type, 16x1.75 wheels, \$17. FR 5-4763. A  
WASHER, 1956 Kenmore automatic, dual-cycle, Suds Saver, \$95. OR 7-3914. A  
RUG, 6x9 Chinese hooked, pastels, \$15. OR 4-1098. A  
PLYMOUTH, 1947 convertible, \$175. OR 2-7477. A  
CAMERA, Meteor, flash, case, \$4. PL 7-3774. A  
MICROMETERS, inside measuring, 2"-12.5", case, \$10. FR 4-1897. A  
BICYCLE, J. C. Higgins 26" boys', racer-type, \$25. OR 4-2945. A  
HI-FI EQUIPMENT, amplifier, tuner, speaker; speaker enclosure, blonde. PL 2-9597. A  
COUCH, modern sleeper, custom-built, 4 mo old, \$50. DA 9-8334. A

## FOR SALE

SHOPSMITH, 1957, jointer & other extras, cost \$425, equity \$90 & assume payments totaling \$256.21. Box 1402. A  
REFRIGERATOR, Philco 7.1 cu ft, \$75. OS 5-4022. A  
CHEVROLET, 1948, new paint. FR 7-1478. A  
CHILDREN'S CLOTHING, girl's, sizes 4-6, Teddy Bear coat, dresses, skirts; boy's, sizes 6-18 mo, suits. Box 1412. A  
CAR CHAINS, pr, 1 yr old, \$12. OR 2-8035. A  
RIFLE, .22 automatic, \$25. PL 6-9697. A  
TRAILER, 4'x8' utility, \$50. FA 8-9143. A  
HOUSE TRAILER, 1949 18', \$100. OS 5-3805 between 10 a.m. & 2 p.m. A  
ENGINE, Johnson outboard, 25 hp, tank, controls, \$200. PL 6-7666. A  
RANGE, gas, broiler, \$35. PL 4-7737. A  
HOUSE, 3-bdrm, 2 baths, Playa del Rey, 1600 sq ft, view, contemporary, shop, study, laundry room. EX 1-4764. A  
TRAILER, 2-wheel, 4'x7', 36" solid sides, 2,000-lb axle, 15" wheels, tail & stop lights, tarp, \$80. OS 5-2617. A  
RABBITS, does, 2; double hutches, 3. OS 5-4994. A  
CABIN, Lake Arrowhead, furnished, equipped for all-year living, sleeps 10, utilities, heat thermostat, paved road w/creek in front, \$1500 down, \$4750. OR 4-1783. A  
LOTS, 2, Edwards AFB area. PL 4-7891. A  
STUDEBAKER, 1951 Champion sport coupe, overhauled engine, Hydramatic. OS 6-1328. A  
HOUSEHOLD FURNISHINGS, stove, electric, \$60; mirror, 40x60, \$35; laundry tray & faucets, cast iron, \$15; corner table, \$5; end table, glass-topped, \$5. TE 1-2973. A  
MOTORCYCLE, 1955 Harley-Davidson, \$400. FR 4-2798. A  
GOLF CLUBS, Kroydon Cardinal 4-wood set, 8 mo old, cost \$100, \$50. OS 5-6624. A  
TRAILER, teardrop-type, sleeps 3, alum. exterior, stove, ice box, 20-gal water tank w/hand pump, \$250. FR 6-5656. A  
TRAILER, 4x6 utility, safety chain, \$25. FR 5-5838. A  
CAR BED-SEAT, deluxe, \$7. FR 5-7822. A  
FURNITURE, table & 4 chairs, light oak, chairs re-covered, \$20. OS 5-9054. A  
TURNTABLE, professional 16", Gray 106SP arm, G.E. 3-play cartridge, \$90. AX 2-4477. A  
TRAILER, 4x8 utility, 2-wheel, \$50. DA 9-6903. A  
BOAT, 12' plywood, glass bottom, trailer, \$150. OS 6-9637. A  
LOT, 83'x150', Yucaipa, Calif., frontage on Fairview, \$2650. DA 9-6634. A  
TV SET, DuMont 16" console, blonde, \$35. TE 2-4472. A  
PLYMOUTH, 1951 2-dr Concord fast-back. FR 9-9616. A  
BOAT, Glenwood 12' Fiberglass, seat & back upholstered w/6" foam rubber, outboard, \$200. AX 1-5462. A  
SOFA, Hide-a-bed sleeper, 2 yr old, cost \$219, \$65. FR 4-4721. A  
WASHER, Westinghouse L5 automatic, \$49. DA 3-0270. A  
APPLIANCES, G.E.; refrigerator, \$50; range, gas, oven thermostat, \$25. FR 5-5328. A  
PHOTO EQUIPMENT, camera, 2 1/4x3 1/4 Speed Graphic, accessories, case, \$125; enlarger, solar-type, \$40; easel, 11x14, \$5; timer, electric, \$10; developing tanks, trays, accessories, \$7.50. DA 9-6894. A  
FISHING EQUIPMENT, rods & reels, 2, salt water-type, \$12. GR 7-1539. A  
LAWN MOWER, just sharpened, w/canvas grass catcher & lawn edger, \$3.95. FR 6-4860. A  
TRAILER, 2-wheel, box-type, 6.00x16 tires, \$38. PL 5-2412. A  
TELESCOPE, antique mariner-type, brass, 20-power, \$15. Box 1410. A  
CABIN CRUISER, 26', sleeps 4, Gray 150-hp engine, \$5500. TE 3-1235. A  
STUDEBAKER, 1952 Commander 4-dr sedan, overdrive. \$225. Box 1411. A  
FREEZER, Amana 12' upright. OS 6-6478. A  
DINING ROOM SET, solid oak, extension table, 4 chairs, buffet, serving cart, \$68. OS 9-3984. A  
PONTIAC, 1949 2-dr, Hydramatic, \$130. PL 9-0781. A  
PIANO, Lyon & Healy studio-type, \$150. FA 8-8785. A  
FLUTE, Gretsch C, new pads. FR 9-9616. A  
IRONER, Kenmore, \$45. FR 9-8547. A  
CYMBAL, 14" Zilqian high-hat, thin, \$10. Box 1412. A

## WANTED TO BUY

BAR BELLS, w/related equipment. PL 4-7891. B  
TEXTBOOK, General Chemistry, Dr. Linus Pauling, 2nd edition. FR 9-9616. B  
TONNEAU COVER, 1957 Ford. FR 4-4140. A  
HEATER SYSTEM, complete Magic Air, 1954 Ford. FR 5-5838. B  
ENCYCLOPEDIA, late edition. DA 9-2147. B  
FREEZER, small. OR 4-3588. B  
DRAFTING MACHINE, old type, \$25. GR 7-7024. B  
SLIDE RULE, 8" circular. Box 1403. B  
SKIING EQUIPMENT, man's, 7' skis, poles, boots; child's, 5' skis, poles, boots. FR 5-4763. B  
BICYCLE, 2, girls', 6-yr size, max \$5. OS 9-3188. B

## FOR TRADE

CHEVROLET, 1957 2-dr 8-cyl 150, stick-shift, trade equity for 1950-1951 Chevrolet or Ford. Box 1404. C  
HOUSE TRAILER, 1954 eastern-built, 35', trade for R-zone lot. OS 6-9086. C  
**FREE (to be given away)**  
KITTENS, beautiful black & gray marble, just weaned, seeking kind home. Box 1405. D  
MAGAZINES, Time & Newsweek back issues. FR 9-9616. D  
**RENTALS OFFERED**  
ROOM, furnished, Lennox, 2 men, twin beds, shower, private entrance & parking. OR 2-2269. E  
CABIN, Green Valley Lake. DA 4-3217. A  
APARTMENT, 3-bdrm, unfurnished, Playa del Rey, view, built-ins, disposal, w/w carpeting, beam ceilings, drapes, aqarage, sundeck, \$165 mo. EX 1-4420. E  
ROOM, near Northrop, 1 or 2 men. OS 6-0346. E  
HOUSE, 3-bdrm, Manhattan Beach, near schools & shopping, partly furnished, \$120; unfurnished, \$110. Box 1408. E  
SHARE APARTMENT, 2 men desire to share with 1 man, 2-bdrm, Imperial-Crenshaw area. OS 5-2305. E  
APARTMENT, 2-bdrm, unfurnished, upper, garage, laundry room, disposal, near Northrop & buses, \$89.50 mo. OR 1-3421. E  
APARTMENT, 2-bdrm, Gardena, fenced yard, garage, disposal, children OK, \$75 mo. PL 4-8281. E  
APARTMENT, 2-bdrm, unfurnished, disposal, garage, laundry room, TV jack, near buses, water paid, \$89.50 mo. OR 1-3421. E  
SHARE HOUSE, desire young man to share with same, furnished, near Northrop, \$45 mo. FR 4-3971. E  
CABIN, Crestline, accommodates up to 18, day or weekly rates. OS 6-6074. E  
SHARE HOUSE, desire lady to share with same, 2-bdrm. OR 2-5647. E  
APARTMENT, furnished, Lawndale, \$35 mo. DA 9-3119. E  
HOUSE, 3-rm, unfurnished, Manchester-Vermont area. PL 2-6893. E  
APARTMENT, 4-rm, near Northrop, \$62.50 mo. PL 6-6177. E  
HOUSE, 3-bdrm, 2 baths, 2-car garage, Torrance, \$132 mo. FA 8-7618. E  
ROOM, near Northrop. DA 4-3217. E  
APARTMENTS, 1-bdrm, furnished or unfurnished, airport, disposal, w/w carpeting, knotty pine kitchen, near Northrop, water paid. OS 5-4501. E  
ROOM, share bath, private entrance, off-street parking, men only, \$30 mo. OS 6-3160. E  
APARTMENT, 2-bdrm, 6-rm, furnished, near shopping & buses; for 2, \$110; 3, \$115; 4, \$120 mo. DA 9-1955. E

## CHILD CARE OFFERED

CHILD CARE, hot breakfast & lunch, fenced yard, references, licensed, near Northrop. OS 5-7088. G

## PERSONALS

THANK YOU to all the wonderful people from departments 5353 and 5340 for their help when our 3-day old baby boy, Jerry, passed away. MR. & MRS. DON E. HALL. L

THANK YOU to all my Northrop friends for their thoughtfulness & kindness at the loss of my mother. FRANCES S. ARGUELLO. L

## FOR SALE OR TRADE

SUPERSHOP, 8" saw, carbide blade, plywood blade, sanding disk; 1/2" drill press, drum sander; 12" swing lathe, attachments; molding set; 1/2-hp motor; \$125 or trade for car. FR 5-7822. M  
WASHER, Bendix automatic, \$35 or trade for cement blocks or 3' chain link fence material. DA 6-5558. M  
DODGE, 1947 4-dr sedan, padded dash, rear-dr safety locks, sell or trade for spinet, electric piano, recent Britannica, World Book or Shopsmith. FR 5-5298. M  
OLDSMOBILE, 1951 Holiday 98, dual exhausts, spotlights, \$175 or trade for 1950 Chev. speed equipment. Box 1409. E  
TV SET, Kaye-Halbert 21", blonde console, remote control, sell or trade for 35 mm camera or bench-type drill press. FR 9-7224. M  
FURNITURE, couch, chair, sell or trade for portable typewriter. FA 8-0482. M  
LINCOLN, 1953 Capri hardtop, power equipment, tinted glass, \$725 or trade for 1953-1954 4-dr. TE 3-4191. M  
BABY FURNITURE, car bed, car seat, jumper-chair, combination high chair-stroller, sell or trade for chest of drawers. OS 6-3326. M  
CAMPER TOP, fits most pickup beds, aluminum frame, heavy hatch canvas cover, \$30 or trade. FR 4-0976. M  
BABY CARRIAGE, Welsh Deluxe, wire wheels, folding top, \$20 or trade for stroller. OS 9-2327. M  
LOUNGE CHAIR, Criswell vibrator-type, lightweight, portable, cost \$189, sell or trade for drums. FR 2-9051. M  
CHEVROLET, 1957 2-dr sedan, Powerpac, overdrive, equity \$450 or trade for 1952-1953 Chevrolet or 1/2-ton pickup. TE 4-6636. M  
DIAMOND RING, man's, approx. 1/3 carat. FR 4-4140. M  
HOUSE, 3-bdrm, La Mirada, sell or trade for same in Inglewood area. LA 1-3859. M  
REDUCING PLAN, Silhouette, 18-mo woman's membership, \$50 or trade for twin-size bed. DA 9-8334. M



## RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
WASHINGTON & NORMANDIE, Los Angeles. ROBERT L. ROBINSON (5503-39065, ext. 2417). RE 1-2296. 2-1  
(Zone 2)  
COLORADO & ORANGE GROVE, Pasadena. (Consider car pool; prefer ride only.) JIM RICHARDSON (5235-54910, ext. 2481). SY 2-2281. 2-2  
(Zone 4)  
WESTERN & IMPERIAL, Los Angeles. LORETTA ROBERTS (5210-54966, ext. 1918). PL 4-1819. 2-4  
TWEEDY & ATLANTIC, South Gate. LELAND B. CROWSON (5564-20429, ext. 555). LO 7-8374. 2-4  
GUNN & TELEGRAPH, South Whittier. (Car pool desired; via Imperial.) J. F. MCKENZIE (5221-54873, ext. 2276). OX 6-2400. 2-4  
(Zone 8)  
YUKON & 182nd ST., Torrance. BEVERLY MARKIN (5568-26903, ext. 2745). DA 9-4010. 2-8  
GAFFEY & 24th ST., San Pedro. (Established car pool desires 3 more drivers.) JOSEPH D. AZAR (5221-54845, ext. 2203). TE 2-7971. 2-8  
(Zone 9)  
TORRANCE BLVD. & BROADWAY, Redondo Beach. ED DELANEY (5406-55291, ext. 2220). FR 2-7532. 2-9  
COMPTON BLVD. & PRAIRIE, Lawndale. (Will come early or stay late; want steady ride.) KATHLEEN T. RHODES (5503-18245, ext. 2431). 2-9  
7:30 a.m. — 4:15 p.m.  
(Zone 1)  
WILSHIRE & VERMONT, Los Angeles. ISABEL JARFAS (8910-14203, ext. 1596). A  
(Zone 4)  
LAKEWOOD & IMPERIAL, Downey. MORRIS BROWN (9515-27999, ext. 474). TO 1-8508. 3-4

## RIDES WANTED

7:30 a.m. — 4:15 p.m.

(Zone 4)  
ORR & DAY RD. & FLORENCE, Santa Fe Springs. (Established car pool.) BILL GOODWIN (9012-49408, ext. 2273). UN 4-7560. 3-4  
(Zone 9)  
HAWTHORNE & MANHATTAN BEACH BLVD., Lawndale. GLORIANNE JONES (9542-41955, ext. 2228). OS 5-1757. 3-9  
(Zone 10)  
EL SEGUNDO BLVD. & INGLEWOOD AVE., Hawthorne. LOIS HANSEN (4200-54390, ext. 674). OS 5-9689. 3-10  
8:00 a.m. — 4:45 p.m.  
(Zone 4)  
NORMANDIE & IMPERIAL, Los Angeles. (Car pool desired.) LEON WILLOUGHBY (3254-52172, ext. 2500). PL 5-7262. 5-4  
IMPERIAL & DOWNEY AVE., Downey. (Car pool desired.) JAMES F. LYNCH (2881-30089, ext. 2375). TO 2-0108. 5-4  
(Zone 8)  
CRENSHAW & 179th ST., Torrance. V. A. MORGAN (3114-54852, ext. 2628). DA 4-0690. 5-8  
(Zone 9)  
AVENUE D & IRENA, Redondo Beach. (Car pool considered.) T. K. TOUW (3130-33250, ext. 1555). FR 5-1377. 5-9  
(Zone 10)  
MANHATTAN AVE. & 4th ST., Hermosa Beach. LOIS PETERSON (3411-44845, ext. 1866). FR 6-4152. 5-10  
(Zone 14)  
FAIRFAX & OLYMPIC, Los Angeles. (Established car pool.) HAL FISHER (3542-50302, ext. 710). WE 8-8325. 5-14  
3:45 p.m. — 12:15 a.m.  
(Zone 4)  
VERMONT & IMPERIAL, Los Angeles. WESLEY D. FLANDERS (5564-49768, ext. 555). 6-4  
(More GMW, Page 5)



# Awards Program Slated For Outstanding Scouts

The first annual Institutional Meritorious Awards program for NRC-sponsored scouting groups will be held Friday, April 18.

This new awards program is being established as a means of recognition for the outstanding accomplishments in the field of scouting.

During the past few years the NRC-sponsored scouting program has gradually grown from one unit to three — including Cub Scouts, Boy Scouts, Land Explorers and Sea Explorers — Stan

## NIGHT SHIFT GEM HUNTERS TRAVEL TO BORON AREA

Specimens of the much-hunted petrified wood from the Boron Dry Lake area were found by Night Shift Gem & Mineral Club prospectors. The finds, including some agate and jasper, were registered during a recent weekend trip to the desert.

Commissioner Victor Lincoln reported that overnight camp was made by the old clay mine area.

Morris, scouting coordinator, pointed out.

In addition, the Girl Scout program has experienced considerable growth to the point where there are now units embracing every age level in the program.

Because of this increasing interest in scouting and as a means of stimulating added growth, Northrop will present an institutional meritorious award to the most outstanding scout in each unit. Selection for the award will be on the basis of achievements during the past year.

The program outlined for April 18 will start at 7 p.m. Following a presentation of colors, each scout unit will participate in a colorful skit. Taking part in the program will be area scouting officials.

Movies and refreshments will be enjoyed following the awards program.

All Norcrafters, members of their families and friends who are interested in scouting are cordially invited to attend awards program at the NRC Clubhouse.



**SKI CLUB OUTING TO MAMMOTH**—First weekend trip sponsored by this fast growing NRC club found 38 members on the slopes at Mammoth. Although sign in photo reads "advanced", there were many beginners as well as experts among the group. Color slides and movies taken during the outing will be shown at an early meeting. William Loomis, commissioner, states that the club is staging its second weekend outing April 18-20. Interested Norcrafters can contact Personnel Activities.



YOUR BADGE IS A TOOL TOO!

## More Going My Way

### RIDES WANTED

4:45 p.m. — 1:15 a.m.

(Zone 1)  
WESTERN & 3rd ST. or CRENSHAW & WILSHIRE, Los Angeles. CHRISTIE BOYKIN (5353-16730, ext. 2765). DU 4-4289.

(Zone 6)  
NORMANDIE & 161st ST., Gardena. ANN MORREL (5355-52632, ext. 2083). DA 9-3563.

(Zone 12)  
PICO & OCEAN, Santa Monica. BEN SIHAMAN (5566-54136, ext. 1585). 8-12

(Zone 14)  
WEST BLVD. & FLORENCE, Los Angeles. BARBARA GARDNER (3144-49451), ext. 466. PL 8-6695.

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 2)  
COLORADO & ORANGE GROVE, Pasadena. (Consider car pool; prefer ride only.) JIM RICHARDSON (5235-54910, ext. 2481). SY 2-2281.

(Zone 4)  
GUNN & TELEGRAPH, South Whittier. (Car pool desired; via Imperial.) J. F. MCKENZIE (5221-54873, ext. 2276). OX 6-2400.

(Zone 5)  
CHAPMAN & HWY 39, Anaheim. (Via Lincoln, Artesia or Rosecrans; prefer Buena Park riders.) T. M. ELROD (5501-17641, ext. 2200). LE 9-2895.

BROOKHURST & ORANGETHORPE, Fullerton. (Car pool desired.) L. J. GODDARD (5561-18899, ext. 1280). LA 5-8045.

(Zone 8)  
GAFFEY & 24th ST., San Pedro. (Established car pool desires 3 more driver-riders.) JOSEPH D. AZAR (5221-54845, ext. 2203). TE 2-7971.

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 8)  
WESTERN & PACIFIC COAST HWY., Harbor City. JOE D. HYDE, JR. (5223-15256, ext. 563).

7:30 a.m. — 4:15 p.m.

(Zone 1)  
RAMSDALL & FOOTHILL, La Crescenta. (Meet in La Crescenta, La Canada, West Pasadena or Highland Park.) M. L. DUNBAR (5220-31869, ext. 2540). CH 9-6305.

(Zone 4)  
ORR & DAY RD. & FLORENCE, Santa Fe Springs. (Established car pool.) BILL GOODWIN (9012-49408, ext. 2273). UN 4-7560.

(Zone 10)  
PIER & REDONDO BEACH BLVD., Hermosa Beach. (Can take 2 riders; have lot pass.) CALLI MONIZ (5143-43550, ext. 663). FR 6-0734.

8:00 a.m. — 4:45 p.m.

(Zone 4)  
IMPERIAL & DOWNEY AVE., Downey. (Car pool desired.) JAMES F. LYNCH (2881-30089, ext. 2375). TO 2-0108. 15-4  
NORMANDIE & IMPERIAL, Los Angeles. (Car pool desired.) LEON WILLOUGHBY (3254-51272, ext. 2500). PL 5-7262. 15-4

(Zone 9)  
AVENUE D & IRENA, Redondo Beach. (Car pool considered.) T. K. TOUW (3130-33250, ext. 1555). FR 5-1377. 15-9

(Zone 14)  
FAIRFAX & OLYMPIC, Los Angeles. (Established car pool; have lot pass.) HAL FISHER (3542-50302, ext. 710). WE 8-8325.

SLAUSON & ANGELES VISTA, Los Angeles. (Via Slauson to La Brea or Crenshaw.) CORINNE DAVIS (3144-12458, ext. 1848). AX 4-0652.

## Three Northrop Toastmaster Clubs Hold Officer Installation Dinners

Dominating activities in three Northrop Toastmaster Clubs are the election of new officers and their installation.

Nor-Air Toastmasters 1398 will hold its officer installation dinner meet this coming Saturday, April 12. The club's new officers will be sworn in by Max Sachs, District 50 governor.

New president is Ernie McNeil, succeeding Ray Grish. Other officers are Len Haueter, educational vice-president; Paul Vido, administrative vice-president; and Ray Brady, secretary.

Also due to take over new posts are Jay Rayner, treasurer; Ray Oakes, sergeant at arms; and Jack Miller, publicity. The installation meeting is slated at the Eleda Restaurant.

Northrop Toastmasters 212 held its officer installation last Thursday at the King's X.

New president is Fred Barger. The following members have been voted to office with Barger—Will Tolles, educational vice-president; Earl Haig, administrative vice-president; Jack Apodaca, secretary; Jim Morton, treasurer; Norb Lorenz, sergeant at arms; and Jeff Bevis, publicity. Outgoing president is John Langdon.

The third Toastmaster group, Club 2583, installed its new officers at a recent dinner meeting at the Buggy Whip Restaurant.

## FLYING WHEELS COURT QUINTET TO BE FORMED

The Gardena Chamber of Commerce is sponsoring the formation of a "Flying Wheels" basketball team for all interested paraplegics.

In cooperation with the Chamber, the Northrop Personnel Activities office will accept entries from all interested Norcrafters. Contact Don Greco at the Personnel Activities office, Plant One, extension 2784.

lieutenant governor of District 50 was installing official. The Club's new president is Walt Brown.

Elected to serve for a six-month term were Walt Grey, educational vice-president; Dick Young, administrative vice-president; John Musulin, publicity; Jim

## SPECIAL NOTE FOR BOWLERS

All bowlers who have entered the annual NRC Spring Doubles Tournament are reminded to pick up schedules and prize lists before this weekend. The tournament starts April 12.

## Spring Mixed Chorus Party Features Musical Artistry

A spring entertainment party featuring several well known musical artists is open to all Norcrafters, members of their families and friends. Being held by the NRC Mixed Chorus, the party is slated for Saturday, April 19, 8 p.m., at the NRC Clubhouse.

Among the noted musicians and vocalists who will provide the entertainment is Northrop secretary, Diana Higley. She has starred in a number of operas including a recent presentation of Wagner's "Das Rheingold", at the Los Angeles Conservatory.

Fred Burdick and George and Connie Henwood will offer instrumental arrangements on their electric guitars. Veteran entertainer and dramatic tenor Jack Lockhart will draw from his repertoire of Scotch and Irish novelities, ballads, folk songs, and light opera.

Jean and Shirley Lowrey, husband and wife duet, will provide vocals and Ken Schumacher will

Arndt, secretary; Rudy Pummer, treasurer; and Ted Kelly, sergeant at arms.

In other Toastmaster happenings, Len Haueter and Jim Lynch captured top honors in the Toastmasters area speakoff contest conducted by area seven.

Haueter of Nor-Air Club 1398 won first place and Lynch of Club 212 placed second. Haueter was due to represent area seven in the humorous speech contest but withdrew in favor of Lynch.

The district speakoff will be held at the USC campus May 3, as a preliminary to follow-on contests at the zone and region levels. From this latter competition the winners will go on to the international level contest.

star at the piano. Four barber-shop quartets from the Palos Verdes chapter of barbershop choruses, will round out the bill with the NRC Mixed Chorus.

The party is informal and refreshments will be served to all attendants. Bill Porter, commissioner, stated.

## JOHN RAY SWEEPS SIX TROPHIES IN NRC PHOTO SALON

The many-trophied photographer, Johnny Ray of the NRC Camera Club, scored again. In this year's competition he swept the salon with first prize in all five black-and-white categories.

As though this were not enough, the ambitious camera hobbyist photographed the entire show and won still another trophy for this effort. Total for Johnny Ray—six awards.

Mrs. Bernie Crampton was winner of a trophy during the annual salon for total high points of the year.



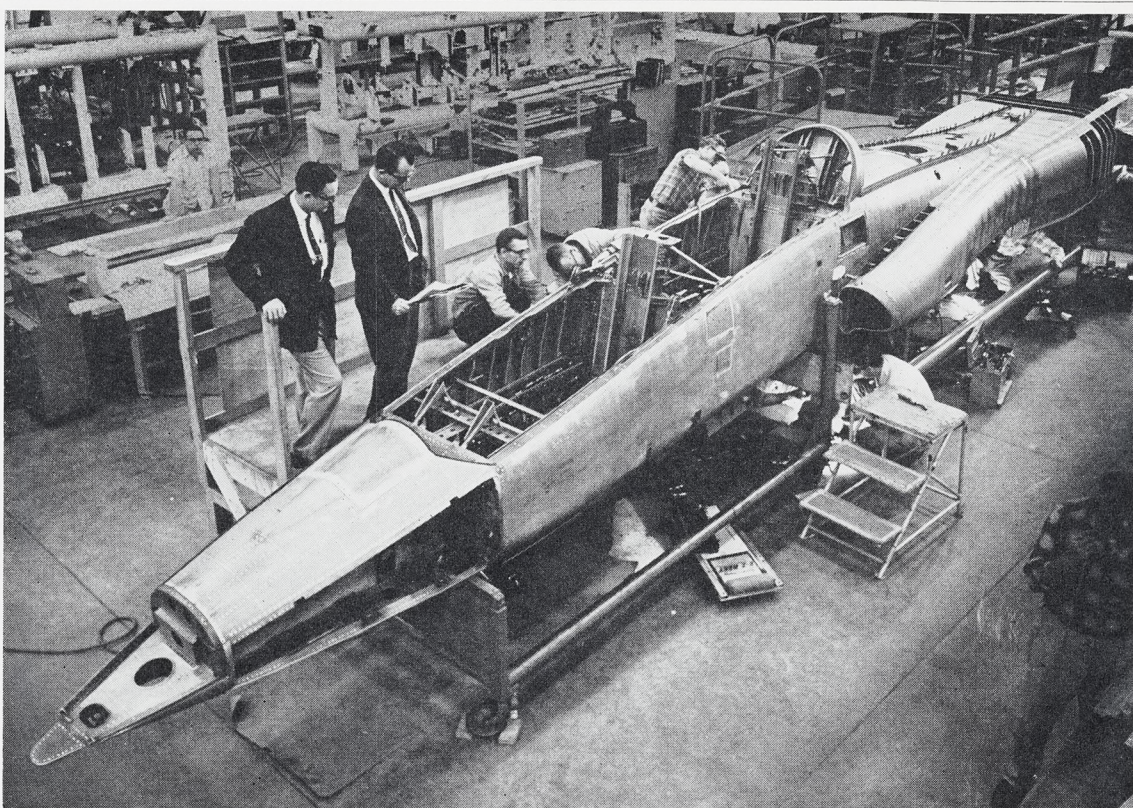
# Northrop News Pictorial



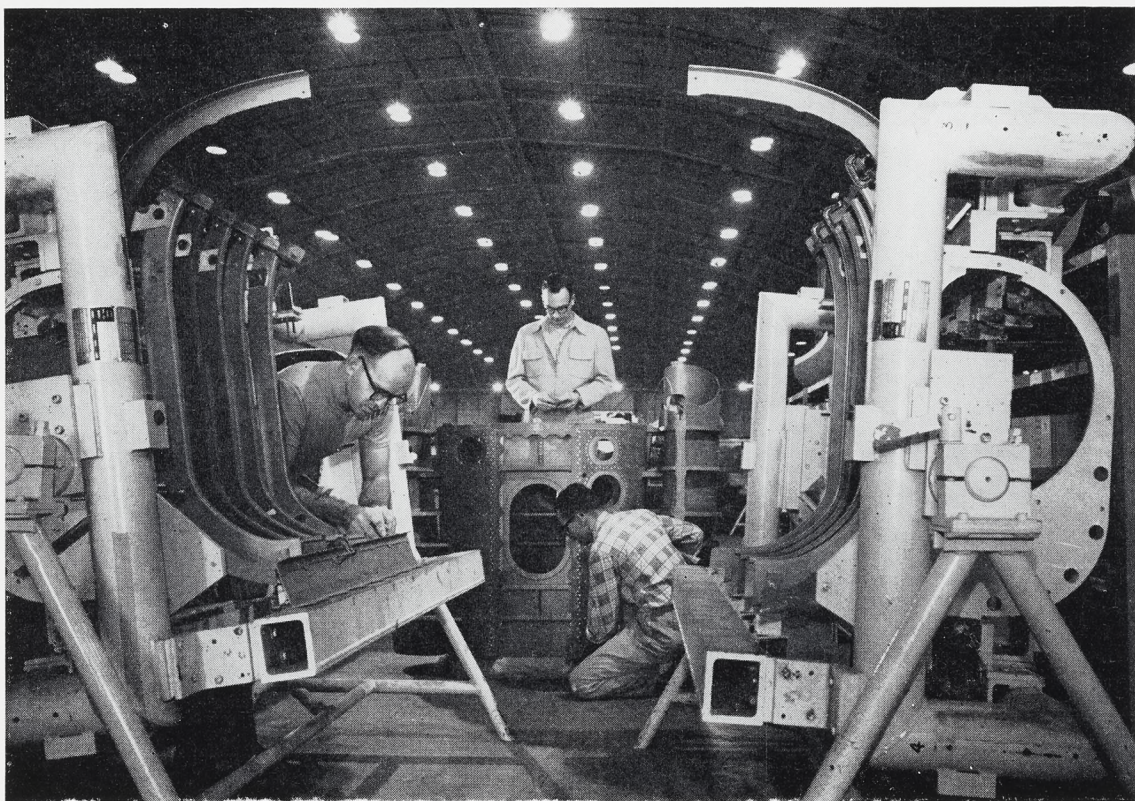
**HIGHLY SKILLED** Norcrafters are assigned to the T-38 project. Above, Julia Day works on installation of side panel surface skin prior to riveting operations.

## T-38 TRAINER PROGRESS

Northrop's new concept in high-performance, lightweight, economical aircraft is taking tangible form in the T-38 supersonic jet trainer now in prototype production at the Radar Hangar. Photo, right, is first view of the recently mated forward and center fuselage sections. From left are Doc Lindsay, foreman, and Sherm Turner, department head, T-38 Prototype section; Ralph Mangan, William Bartlett and Denny Wilson. This first T-38 is scheduled for flight later this year. Sled tests on the ejection system are under way now—see News Briefs.



## The Shape of Supersonic Economy



**SLIM, CLEAN LINES** of the T-38 are indicated in this view of the forward fuselage section. Ray Zeller installs canopy mechanism, rear, as Ernie Green buttons down the hinged nose access panels. T-38 features economical cost and operation, ease of maintenance.

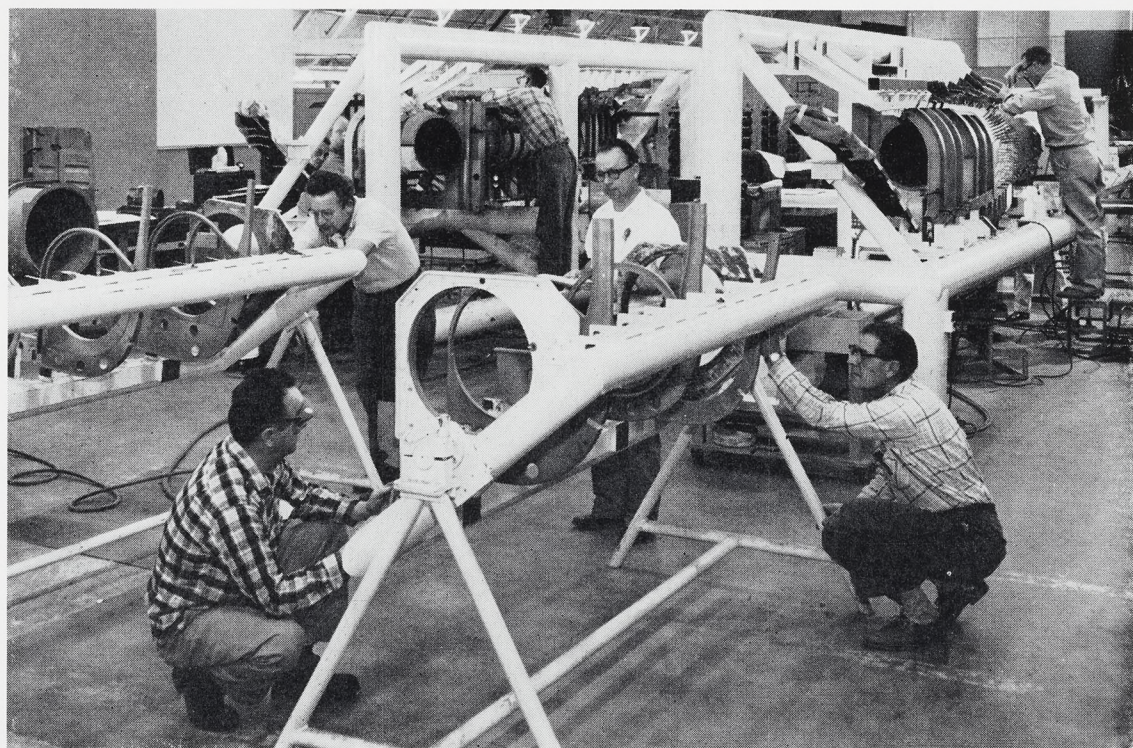
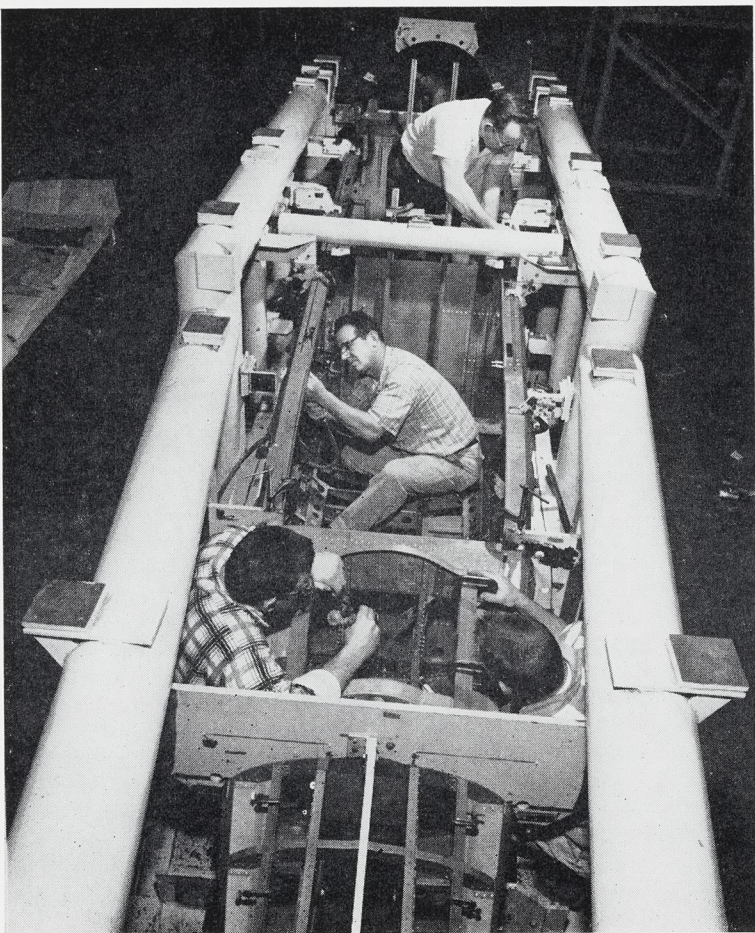


**CENTER FUSELAGE**, barrel section, is assembled in jigs, foreground — Milton McCullough on the job. Rear, Jack Ward, kneeling, and Frank Lippert do pick-up work on a completed barrel section. T-38 incorporates latest state of the art manufacturing techniques; production costs are substantially less than for airplanes of comparable performance characteristics.



**CANOPY ASSEMBLY** aft faring structure is fitted by Jim Wilson as "phantom" Norcrafter checks canopy. Extremely broad view provided by the dual canopies fits visibility requirements for USAF flying training.

## T-38 Trainer Project in High Gear



**FORWARD FUSELAGE** structure is assembled in jig, left. From bottom, Harlan Foster, Bill Hand, Martin Graff, George Farquhar, and, rear, William Martin.

**CENTER FUSELAGE** side panel structures are assembled, above. From left, Orville Martin, Tom McHale, Eugene McMurray, Willis Terry, Chester Tempest, and Donala Hunkle. T-38 will be powered by new, lightweight, small jet engines. Aft section of the trainer is detachable to permit quick engine installation or removal.



# BUY BONDS

See Your  
Department Clerk

NORTHROP

## NEWS BRIEFS

**SNARK BRIEFINGS** — The Weapon System Evaluation Group, Joint Chiefs of Staff, Washington, visited Northrop Division recently for briefings on the cost effectiveness of the Snark and latest utilization concepts for the missile. Headed by Admiral J. H. Sides, the eight-man group met with Corporate, Northrop Division and Nortronics officers and representatives.

**BOUNDARY LAYER CONTROL** — Northrop is presently working on a program to modify a large jet airplane to apply low drag boundary layer control, according to George F. Douglas, vice-president, Engineering. He stated that the program is intended to be used as a technical development in the overall application of low drag BLC to logistics-type aircraft. Dr. Werner Pfenninger, international authority on BLC and director of Northrop's BLC research program; George N. Mangurian, chief Analytical Engineer; and Bill Stuart of Preliminary Design, are project planning leaders.

**SPEED POTENTIAL FOR T-38 AND N-156F** — Welko Gasich, chief Weapon Systems Development engineer, noted this week that past history of jet engine development indicates that, over an engine's useful life span, it grows in thrust by as much as 40 per cent. The engine manufacturers of the J-85—destined to power the T-38 and N-156F—have pointed out that refinements toward getting more thrust from the engine are now in progress. Impact of this engine growth on the T-38 and N-156F, Gasich stated, will put both planes in a higher speed performance class.

**SNARK RECEPTION FAVORABLE** — Northrop News Editor, Charles Bradford, toured SAC headquarters and the eastern seaboard during past three weeks to sample military and public opinion for a story-pictorial on the Snark and its significance to the American scene. His report: The people of Presque Isle, Maine, are anxious to see the Snark missile. They are proud to be the first city in the United States to have a guided missile outfit. Men of the Strategic Air Command assigned to Snark training at Cape Canaveral are happy with the weapon, consider that they are the first troops to be entrusted with the newest warfare science, wouldn't trade their jobs for any other in the AF. SAC high command is pleased with the Snark's reliability, considers it a highly potent and important weapon that complements and broadens the scope of striking power. Story and pictorial on Snark and SAC will appear in early issues of the News.

**QUALITY ON BOEING PROJECT**—Bob Catlin, director of Quality Control, reports that Boeing officials in Washington are

(See NEWS BRIEFS, Page 3.)



**ZERO-LAUNCH, ARTIST'S CONCEPTION**—Northrop supersonic N-156F springs to air from an unprepared hidden site. Advanced N-156F features increased fighting power.

## Miller Cites Good Northrop Position Points to Added Efficiency Emphasis

Northrop's present position and future prospects in the highly competitive defense industry were outlined by General Manager Robert R. Miller in an address at the Management Club annual installation dinner meeting April 11.

"Northrop is probably the only company in the airframe industry to show increased earnings in spite of a decline in sales dur-

ing the first half of fiscal 1958," he said, crediting this outstanding performance to the cost reduction measures.

He pointed to the "very real contributions" that have been made at every level in carrying out the policies of efficiency and economy laid down by President Collins and the directors.

Citing this impressive record, he stressed, "We must do even

better if we are to maintain our competitive position. We must scale ourselves down to an efficient and competitive division, retaining only those supporting functions which are absolutely vital for reaching our objectives."

"Improvement of our status," he continued, "depends on increased sales as well as reduced (See ECONOMY, Page 3.)

## Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, April 23, 1958

## Future Weapons Must Not Shadow Present Deterrent Needs—Alison

The race for the conquest of outer space has changed the nation's feeling toward defense, stated John R. Alison, vice-president, Customer Relations, in a recent talk before the Los Angeles Chamber of Commerce.

He said increased public attention has been focused on weap-

ons of the future as a result of the Russian Sputniks and American Explorers.

However, he cautioned against "the tendency to regard manned aircraft and newest operational weapons like the Snark as obsolescent."

"The United States must main-

tain at all times a powerful force in being," he stressed, "while continuously developing and bringing into operational status weapons better than or comparable to those possessed by any potential aggressor."

He cited the Strategic Air Command as the nation's principal deterrent in being and pointed out that "our moral determination not to initiate a surprise attack against others makes the task of maintaining a U. S. deterrent posture difficult and costly."

"Within the limits of our national resources we must explore every avenue to obtain maximum deterrent for the resources in which we have invested—and it is in this context that the Snark can make a major contribution to U. S. security."

Mr. Alison pointed to the characteristics which make Snark a powerful intercontinental deterrent.

Snark has a high-yield warhead, has demonstrated intercontinental range and accuracy. Its total procurement and operational cost is relatively low. Its size permits transportation by air.

A high percentage of the force can be maintained on ready alert and Snark can strike targets prior to manned bombers thus increasing the effectiveness of the strike force.

It has the capability to fly at (See ALISON, Page 2.)

## Zero Launch Gives N-156 Increased Fighting Power

The "zero-launch" capability of Northrop's supersonic N-156F is one of the features which give this new airplane increased fighting power and versatility, it has been disclosed.

The zero-launch feature permits the N-156F to be based at hidden locations only seconds away from possible areas of air combat or enemy ground installations.

Developed by Northrop especially to meet the requirements of allied free nations, the N-156F design is a result of weapon systems studies carried on in Europe and Asia by special teams of Northrop technicians over the past several years.

Specified as a result of these studies, the zero-launch capability enables the airplane to use standard Air Force mobile launchers, now readily available,

(See N-156, Page 2.)

## Share in America Bond Drive Spurs Payroll Pledges

The major mood is still Share in America.

Three days remain in the drive to spur Norcrafter payroll pledges over the 75-per cent mark.

As reported in the April 9 issue of the News, department clerk drawings are scheduled as each additional 5-per cent plateau is reached.

The first drawing, occasioned (See BONDS, Page 2.)

## Engineer Referral Awards Established by Nortronics

An engineer referral award plan has been established by Nortronics to aid in the recruitment of certain classes of engineering personnel. All Norcrafters are eligible to participate.

Under the plan, an award of \$100 will be paid to each Norcrafter referring an engineer who, as a result, is employed in the Advanced Development Section of the Nortronics Electronic Systems and Equipment department.

This section is currently working in the areas of inertial navigation, infra-red applications and digital computers. The engineering classifications to which the referral plan applies are engi-

eer, senior engineer, and engineering specialist.

Referred applicants must produce a referral award card (Nortronics Form 14) identifying the Norcrafter who makes the referral. These cards will be available at Personnel and Industrial Relations offices.

Payment of the award will be made after the applicant has completed 90 days on the job.

Applicants should be directed to Industrial Relations department, Electronic Systems and Support; Nortronics, a division of Northrop Aircraft, Inc.; 222 North Prairie Avenue; Hawthorne, California.



## Visits to Northrop



**FROM NATO**—General Leon Johnson, Air Deputy to General Norstad, receives briefing from Corporate vice-president T. V. Jones, left, and Ray Gardner, Engineering Captain William Madden accompanied General Johnson.



**FROM BUDGET OFFICE**—Sandford Leach, second from right, and Lester Bell, second from left, of the Military Division, Bureau of Budgets, tour shop areas following conference. Northrop officials above are Arch Wallen, factory manager, left; Dan Hill, Northrop Division treasurer, center; and Don Lewis, Nortronics treasurer, right.



**FROM WASHINGTON**—Weapon System Evaluation Group, Joint Chiefs of Staff, visited Northrop to discuss Snark program. Admiral J. H. Sides, second from right, headed the group. Participating in the meeting were T. V. Jones, Corporate vice-president, right; Colonel E. D. Burris, General Manager Robert R. Miller and Oscar Minton; Dr. W. F. Offutt, Captain R. K. Worthington, D. A. Katcher, R. J. Mead, D. Y. Barrer and R. H. Dubois. Latter six gentlemen are with the Evaluation Group.



**FROM OAKLAND**—Thirty officers of the Bureau of Aeronautics Training Unit 873, Oakland Naval Air Station, were recent guests on a plant tour hosted by Military Relations. Headed by Commander Eugene Yoder, the group is shown above in the honeycomb bonding area with Loyal Massey of Production Fabrication department.

## Alison Discusses Snark in Context Of National Resources for Security

(Continued from Page 1)  
high and low altitudes. Despite connection of the term obsolescence with weapons already developed, Snark will be highly effective against any enemy system well into the middle 1960's and beyond.

Snark's low cost permits dispersal and increases the enemy's offensive requirements.

Snark development is essentially complete. The missile is in production and can be in inventory in numbers by 1960.

Concerning Snark's vulnerability, Mr. Alison stated that allowing for the highest estimate of air defense against the Snark, it is surprising how few of them, when used in mass attack, are required to reach even the most heavily defended targets.

He said that despite advanced technology no adequate defense against low-flying aircraft has

been developed. Snark is capable of attacks from sea level to its maximum altitude. Programmed

at minimum altitude, very few Snarks would be stopped before reaching target areas.

## Faster System Established For Handling T-38 Changes

A time-saving method of processing T-38 engineering changes from design to the shop has been developed by Systems Engineering in cooperation with affected operating departments.

The new T-38 engineering order release system cuts flow time from 206 working hours to 82 hours in routing and coordination of changes, according to B. R. Bonnett, Administrative Services director.

Following a request by Vice-Presidents George Douglas, Engineering, and Richard R. Nolan,

Manufacturing, the Systems Engineering section of Administrative Services initiated an analysis of the old system. Objective was to devise a more efficient procedure for handling changes.

A key refinement over the old system is the establishment of a change programming group to provide basic planning and change programming. This group consists of representatives from Change Control, Materiel, Planning, Manufacturing Control and Production.

A second major improvement over the old system is the consolidation of the functions of Change Control, Engineering Release, Blueprint Control and Reproduction into one area. This eliminated lost time that had been due to transmitting changes from point to point.

Other improvements in the handling of purchasing, receiving, inspection and disbursing of materials have also contributed to the flow time reduction.

Result of the time-saving system is better scheduling performance, it was pointed out by George Percy, supervisor, Change Control for manned aircraft.

Don Johnstone of Administrative Services was assigned to the project and was assisted by personnel of the operating departments in the implementation of the more efficient procedure.

## FIVE CHARITIES RECEIVE GRANTS THRU NOR-AID

Norcrafters have contributed through AID-United Givers to five participating causes which had conducted recent fund-raising drives, according to Mal Mountain, AID chairman.

AID beneficiaries were Arthritis and Rheumatism Foundation, Heart Association, Los Angeles YMCA, American Red Cross, and Los Angeles County Crippled Children's Society.

Mountain also reported that the Better Business Bureau of Los Angeles has named AID-United Givers as having the lowest cost of any fund-raising organization in the area. This announcement was based on statistics reported by the Board of Social Service Commissioners of Los Angeles.

## Multi-Mach N-156 Packs Versatile Fighting Punch

(Continued from Page 1)

to operate from small, scattered defense sites near international borders.

The N-156F airplane is designed for supersonic speeds and can be operated from short runways or unimproved airfields. It can carry a wide variety of hypersonic missiles capable of destroying the fastest enemy air-

craft or of demolishing ground installations.

This new lightweight weapon system is one of a family of low-cost, high-performance aircraft being developed by Northrop which include the new USAF T-38 supersonic trainer already in prototype production.

Recent technological breakthroughs in the development of small jet engines with greatly increased thrust-to-weight ratios make possible the N-156F's light weight and low cost.

The operational N-156F, although weighing less than half that of other century series aircraft, will have superior weapon system performance.

The lightweight concept results in substantial savings not only in the production phases, but also in overall costs of operation and maintenance throughout the airplane's life.

Fuel consumption of the N-156F, for example, will be less than half that of other aircraft in its performance class. Even tire wear will be reduced.

## BOND DRIVE

(Continued from Page 1)

by the initial surge of pledges to a total of 55 per cent, was won by Ella Post, clerk for departments 3600 and 3610.

Ella, overwhelmed about winning the electric barbecue, says that she intends building a patio around it.

Still to be awarded are four prizes displayed at the pre-Savings Bonds Drive meetings for department clerks. See photo, Page 6.

# Northrop News

Vol. 16

Northrop Field, Hawthorne, Calif.

No. 15

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CHARLES BRADFORD, Editor

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## Scorpions Set Records In Squadron Readiness

Scorpion units across the nation have set some impressive performance records recently.

The 465th Fighter Interceptor Squadron of Griffiss AFB, New York, was the first F-89J unit to complete a four-week rocketry training program at Yuma.

## Ballhaus to Head Missile Guidance Panel Discussion

Dr. William F. Ballhaus, Corporate vice-president and general manager, Nortronics, will officiate at one of the sessions of the Institute of the Aeronautical Sciences' National Midwestern Meeting on Guided Missiles.

He will be chairman of the missile guidance and control discussion, scheduled for the morning of May 12. A recognized authority in this field, he has played a key role in development of the Snark.

Co-speakers with Dr. Ballhaus are M. W. Lifson, Chance Vought Aircraft, Inc.; James W. Follin, Jr., Applied Physics Lab, Johns Hopkins University; Stanley D. Hays, Convair Division of General Dynamics Corporation; and H. Schlitt, Avionics Division of Bell Aircraft Corporation.

Some 35 technical papers will be presented during the entire three-day classified meeting. The other sessions will cover astronautics, propulsion, missile development management, aerodynamics and ballistics, structures and aerodynamic heating, operational analysis, and composite design.

An outstanding unit rating was awarded the 465th when the squadron posted a final mark of 800 hits for 1000 intercept attempts. This included a record 95 consecutive successful intercepts.

Record-breakers in their own right were members of the 606th of Griffiss who supported the 465th's operational commitment 100 per cent—a "ready aircraft" for every mission.

At Presque Isle AFB, Maine, the 23rd Maintenance Squadron posted a perfect 24-hour combat readiness status with all F-89H Scorpions assigned "on the line". This accomplishment came in February at the height of a rugged New England winter.

Across the continent in Portland, Oregon, the 460th Fighter Interceptor Squadron was named "the best and safest squadron in the Air Defense Command and the most proficient in the North American Defense System," by Brigadier General Charles R. Bond, 25th Air Division Commander.

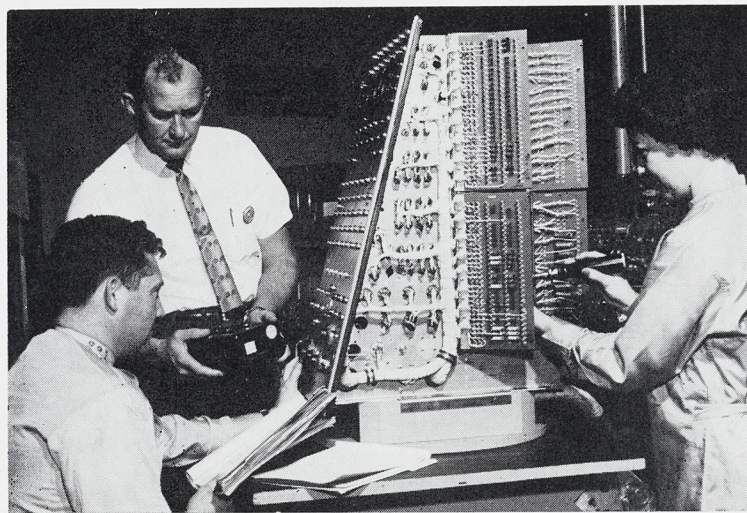
## SHOPPER GARNERS CAR WITH CHOW

Dan Peck, Torrance Art Services department, found a new Edsel in his shopping bag.

The winner of a drawing at the Fullerton Shopping Bag supermarket, Dan was presented on the following day with an Edsel four-door hardtop Citation.

According to Dan, who had signed a couple of cards, dropped them in a container, and promptly forgot about them, it's the first car he's owned where the price was perfect.

## Nortronics ES&E Production



**ELECTRONICS PRODUCTION**—Nortronics' ES&E element is engaged in manufacture of Snark guidance system test equipment. Above, Pat Deaves and Bud Schwartz assist James Kelly, left, in a pre-inspection check on the intricate assembly. Over 1800 Norcrafters are assigned to electronics production under Nortronics Manufacturing Manager Paul Jacobs. Product reliability—their keynote.

## CORRECT NAME AND ADDRESS

Current addresses and phone numbers of all Norcrafters are needed by the Personnel department. It was pointed out by D. C. Stadler, manager, Personnel Administration. Insurance papers, Social Security credits, tax information and company correspondence are often returned after having been unclaimed at the address on file with Personnel.

Norcrafters who have moved recently are asked to fill out form 59-142, Personnel Record Change Notice, which can be obtained from department clerks. When this form is completed, it should be returned to the department clerk for forwarding to Personnel 4220, zone 22.

## Van Dorn Lecture Slated

All phases of material handling will be analyzed in the forthcoming Material Handling and Industrial Packaging Show and correlated technical conferences.

The show, sponsored by the Los Angeles chapter of the American Material Handling Society, is scheduled for May 8, 9 and 10 at the Great Western Exhibit

Center, Santa Ana Freeway and Atlantic Boulevard.

Participating in the conference section devoted to "Material Handling Equipment Selection, Application and Maintenance" is Jim Van Dorn, assistant Materiel manager. His lecture, to be given the morning of May 9, encompasses selection of material handling equipment.

Admission to the show and parallel conferences is free. Inquiries and registration requests may be directed to American Material Handling Society, 2807 Sunset Boulevard, Los Angeles.

## TORRANCE SENDS TEACHERS FOR NORTHROP VISIT

Torrance facility hosted 12 local teachers recently, in conjunction with Business-Industry-Education Day.

The "field trip" for the teachers was sponsored by the Torrance Chamber of Commerce to facilitate communication between education and industry.

The program for the 12 visiting high school and elementary teachers included F-89 and Snark movies, a tour of the facility, and informal discussion of various aspects of Torrance operations.

Not only were the teachers provided with a stimulating and educational agenda—their students lauded the visit. There was no school that day.

## OHIO ALUMNI

Ohio University Alumni Association of Southern California has announced the recent election of Ed Koran, Test Tool Guidance Instrument engineer, as a director.

Koran will serve on the executive board and function as assistant to the president for administrative matters. He will also assist the program chairman in plans for the upcoming reunion.

The approximately 750 active members of the association represent an area bounded by Santa Barbara, San Diego and, on the east, Arizona.

# Added Efficiency, Advanced Projects Headline Northrop's Present, Future

(Continued from Page 1)

costs. You can be sure that your Corporate and Division officers are exerting every effort to get new business."

Next, Mr. Miller turned to Northrop's product areas and pointed out that Northrop is the first American company to undertake development of a NATO and SEATO fighter.

"We're marketing the N-156F as a weapon system, not just as an airplane. As an airplane, it has good speed and altitude capabilities, but the system will include armament which can reach out and knock down any aircraft an enemy could send against our allies."

Turning to the sales picture in the Northrop Division, Mr. Miller pointed to the team effort between the Division and Nortronics. "We in the Northrop Division feel proud that we have a stake in the progress Nortronics is making under the direction of Dr. Ballhaus to establish itself as a leader in its field."

New business in the Northrop Division includes recently completed negotiations on the APAC flight test program which will be carried out under a new contract, he stated.

"We have also answered recent requests for information on additional airframe sections for the McDonnell F-101 and the Boeing KC-135.

"Our sales backlog amounts to more than 265 million dollars," he added.

In a survey of current programs, Mr. Miller called attention to the progress on the T-38, Snark and subcontract project.

Turning from current programs, he pointed to the recent creation of a small, professional, product planning group in Engineering.

"We're also concerned about what will happen five to ten

years from now," he said. "We don't intend to sit and wait for business to fall into our laps, and we're not going to do a lot of shooting at the wrong targets. We're going to determine our own destiny."

"We've got the best facilities in the world and with realistic planning—coupled with the kind of efficiency I know you can produce—the years ahead will be the best in the history of Northrop."



**GAVEL EXCHANGE**—Al Kendall, outgoing Northrop Management Club president, relinquishes gavel and badge of office to new prexy Chuck Davis. Event took place during April meeting. Feature of the meeting was Company state of affairs address by General Manager Robert R. Miller. (See story, beginning on Page One).

## NEWS BRIEFS

(Continued from Page 1)

pleased with the progress Northrop is showing on the KC-135 and 707 sections. Jack Young of the Quality Control department, on a recent visit to Boeing's Transport Division at Renton, noted the improvement in Northrop quality and stated that added effort will continue to improve quality. Among the factors contributing to this achievement is the use of transparent overlays as a check for proper spacing on fuselage external fasteners. Accurate and expedient, the overlays get double use on the job and during inspection.

**T-38 ENGINES ON SCHEDULE**—General Electric has informed the Company that certain flight requirement tests on the J-85-3 engine have been successfully completed. GE also stated that further engine development is expected to progress on schedule and that the J-85 will be available in support of the T-38 flight test program.

**BUDGET OFFICIALS**—Northrop Division last week hosted Sandford B. Leach of the Bureau of the Budget and L. S. Bell, representative from the Air Force Budget Office. Treasurer Dan H. Hill, along with Charles C. Cilley, Corporate vice-president of Finance, and Don L. Lewis, Nortronics treasurer, conferred with the budget officials. Purpose of the visit to Northrop and other aircraft companies was to check the rate of expenditure under government contracts to determine the degree of reliability of expenditure forecasts furnished on a quarterly basis by each company. Also participating in the discussions were Lieutenant Colonels Frank Nocera and Fred L. Hart of the USAF Inspector General's office at Norton AFB, Joseph Corie, Radioplane treasurer, and Max Pellerin, AFPR Administrative Contracting officer.



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

TRAILER, 4'x8'x2' box-type, plywood, custom-built, 8.00x15 tires, \$125. DA 4-4597. A

TRAILER, 1-horse carrier, 8-ply truck tires, \$125. LO 9-5647. A

GUNS, pump rifle, Remington .22, \$15; shotgun, 410-gage, single-shot, \$8. NE 5-4370. A

TROMBONE, Pan American, \$85. DA 9-2639. A

BUICK, 1954 V8 Special 4-dr sedan, Dynaflo, \$895. OS 5-9054. A

BUICK, 1941 convertible, black w/white top, new tires, clutch & pressure plates, 3/4-race bored engine, Harmon Collins cam, milled heads, chopped flywheel, hot ignition, dual carbs. OS 6-0623. A

ENGINE, Mercury KE-4 7.5-hp outboard. TO 6-1333. A

PIANO, Wellington upright concert-type, dark brown finish, bench. OR 7-3553. A

TRUCK, Chevrolet 1957, Sportsman top w/boat carrier. OS 5-2344. A

PIANO, Gulbransen spinet, \$650. OS 5-7705. A

RAINBIRDS, 4, 3/4", w/standup pipes & individual valves, 50' range, \$7 ea or \$25. OS 6-2597. A

HOUSE, 2-bdrm, 2 baths, den, rear bachelor apt, near Northrop, FHA commitment \$16,200, \$21,750. OS 6-3326. A

HOUSE, 3-bdrm, 50'x150' R3 lot, hardwood floors, patio, 2-car garage, shop, near shopping center & schools, \$2000 down, \$11,950. FR 2-0585. A

SEWING MACHINE, Singer console, seat, \$160. TE 3-9902. A

CHRYSLER, 1950 New Yorker, \$200. DA 4-6023. A

LOT, Palos Verdes, 1/2-acre, view, \$15,900. FR 4-6747. A

PLYMOUTH, 1957 Belvedere hardtop, equity \$99 & assume \$83 mo payments totaling \$2324. TE 3-0843. A

CRIB, Kantwet mattress, \$25. DA 4-1960. A

SILVERWARE, Easterling sterling, Rosemary pattern, service for 4, 6-pc settings, butter knife & sugar shell. OX 3-4079. A

PLYMOUTH, 1952 4-dr Cranbrook. FR 4-8732. A

CAR BED-SEAT, baby's blue & gray, \$7. EX 1-4975. A

RANGE, Electromaster electric, 4-element w/deep well, warming oven, 2 storage drawers, \$50. DA 3-7226. A

WILLIS, Jeepster convertible, \$175. OS 9-1698. A

LOT, Big Bear Lake, 78'x120' level, trees, near ski tows. OR 8-5307. A

CHEVROLET, 1955, custom upholstery, new paint, extras. OS 6-6108. A

APPLIANCES, refrigerator, Norge, 9 cu ft, self-defrosting, \$45; range, Roper, \$35. AX 4-7356. A

HOUSE TRAILER, Viking Victoria 26', extras, furnished, equity & assume \$45, mo payments totaling \$900. GA 4-9215. A

MG HARDTOP, 3-window design, 1950-1953 TD's. PL 5-1468. A

NASH, 1951 Statesman, overdrive, \$225. TE 5-5822. A

CAMERA, Crown Graphic, case, accessories, cost \$300, \$150. PL 7-1184. A

CHEVROLET, 1957 V8 station wagon, Powerpac, Powerglide, \$1845. HA 5-1846. A

FURNITURE, sofa bed & chair, rose nylon frieze, dinette set, walnut, table & 4 chairs, \$50. OR 2-2434. A

PUPPIES, Dachshund, 3/4 miniature, AKC, championship background. HA 9-2516. A

FORD, 1946 2-dr V8, \$150. DA 4-7730. A

DAVENPORT, 3-pc sectional, green, \$50. DA 3-1479. A

DRYER, Westinghouse, 220V, \$20. OS 6-7055. A

MOVIE CAMERA, Revere B61 8 mm, f:2.5, fixed focus, \$65. DA 9-5016. A

HOUSE, 3-bdrm, 1 1/4 baths, beam ceilings, fireplace, w/w carpeting, drapes, fenced yard, built-ins, north Torrance, GI resale, \$13,000 at 4 1/2%, \$19,000. DA 9-6404. A

FURNITURE, divan & chair, Queen Anne; wing chair; dinette set, Duncan Phyfe, table & 6 chairs; end tables. OS 6-0632. A

BASEBALL GLOVE, first baseman's, right-hand, \$10. PL 6-0242. A

FORD, 1948 2-dr sedan, black, blue interior, twin pipes, spotlights, rear speaker, customized, other extras, extra engine, \$125. FR 4-7685. A

MUSIC CENTER, Stromberg-Carlson, mahogany, FM radio, 12 1/2" TV, \$35. OR 1-0574. A

WEDDING DRESS, French original, antique white, size 13-14, short sleeves, full length, \$75. FR 9-0045. A

VIOLIN, 3/4-size, \$15. EX 7-5221. A

HOUSE TRAILER, New Moon 1945 coach, 25'. LO 7-6472. A

DINETTE SET, chrome, grey table & 4 red chairs, \$12. FR 5-9640. A

## FOR SALE

BOAT, Eddy Craft Express 1957, 26' sport cruiser, 215-hp Interceptor engine, galley, dinette, sleeps 6, 40-watt Kaar ship-to-shore radio, bait tank, 2 anchors, canvas top, \$9000. DA 4-0978. A

FURNITURE, dinette set, living room suite, bedroom suite, cost \$290, terms, \$200. OS 9-3118 bet. 8 a.m. & 2 p.m. A

RECEIVER, HQ150, matching speaker, \$250. FR 4-4140. A

DOG, cocker spaniel, 2 yr old black female, gentle, AKC, \$50. DA 3-7230. A

CAR COOLER, Traveleira 12V, cost \$36, \$25. NE 1-1341. A

SKI BOAT, Goldigger, supercharged Chevrolet V8 engine, 60 mph, will demonstrate, \$4000. FR 9-6386. A

HOUSE TRAILER, Cozy Cruiser, 14', sleeps 4, elect. brakes, extras, must sell. PL 5-8578. A

VOLKSWAGEN, 1955 sedan, \$1250. NE 2-3064. A

BED, double, mattress, box springs, adjustable frame, \$30. OS 5-1423. A

FURNITURE, sectional, 2-pc brown; sectional, 2-pc green & grey; occasional chairs, 2 red; end tables, 2 blonde, w/matching cocktail table. PL 6-6563. A

CHINA, service for 8 w/extras, cost \$40, \$25. DA 6-4379. A

VOLKSWAGEN, 1956, metallic blue, \$1495. OR 7-8458. A

WASHER, Kenmore wringer-type, timer, \$30. Box 1504. A

OLDSMOBILE, 1954 Super 88 2-dr sedan, 2-tone, power brakes, \$1050. DA 3-4329. A

DOG, Irish setter, 8-mo old female, rabies shot, license, \$10. OR 7-7949. A

CAMERA, Argus C3 35 mm, flash attachment, \$35. Box 1503. A

DOGS, 3 Afghan hounds, 2 yr old, AKC. OS 5-6618. A

RIFLE, Winchester .30-30 carbine, case, ammunition, cleaning kit. AX 1-8365. A

BOAT, 19.5', 1957 35-hp Evinrude engine, trailer, \$900. FR 4-4501. A

FURNITURE, dining room set, mahogany, 6 chairs, \$125; 2 green chairs, 3 tables, \$20 ea; sectional, 3-pc, matching chair, \$290; round coffee table, marble, \$75; corner table, \$125. FR 4-5294. A

RIFLE, Winchester 52 target-type .22, Lyman 20X scope & iron sights. LY 9-7645. A

BOAT, Mitchell cruiser, 16', Fiberglass, Allen trailer. AX 1-3587. A

SOFA, contemporary. VE 7-3728. A

NASH, 1951 Rambler. FR 6-5590. A

COFFEE TABLE, mahogany, glass top, \$10. FR 6-3178. A

FENDER SKIRTS, 1954 Chevrolet, red, \$7.50 pr. AX 5-1750. A

CAR PARTS, 1941 Chevrolet, radiator, vacuum-shift transmission, starter, others. FA 1-3274. A

GOLF CLUBS, Louisville Grand Slam, 9 irons, 3 woods, pro registered, \$60. DA 4-7323. A

RADIOS, 2 portable, transistor, w/batteries, \$39.50 & \$44.50. FR 4-5512. A

MANGLE, Kenmore, \$50. OS 5-0217. A

HOUSE, 2-bdrm, enclosed patio, fireplace, w/w carpeting, built-ins; separate 3-unit rental, stucco, garages, \$175 income; \$31,250. PL 9-9219. A

FORD, 1955 convertible, Ford-O-Matic, white, red & white interior, \$1375. AX 1-9022. A

DESK, reception-type, 2.5'x5'x2.5', dk wood, \$20. Box 1505. A

FISHING RODS, 3 Tonkin, trout fly-type, split bamboo, 9', \$20 ea. NO 4-6030. A

LOT, 83'x150', Yucaipa, Calif., frontage on Fairview, \$2650. DA 9-6634. A

HI-FI UNIT, Altec Lansing speaker system, Harmon Kardom FM-100 tuner, 12-watt hi-fi amp, maple cabinet w/louvered doors, cost \$550, \$450. GA 3-3134. A

WASHERS, 2 automatic, Norge & Westinghouse, \$55 ea. Box 1506. A

TRAILER, 4'x8' box-type, \$80. OS 5-9740. A

HOUSE TRAILER, Columbia 26', inside plumbing. \$1500. PL 5-2715. A

HOUSE TRAILER, 1957 Safeway 33', 2-bdrm, equity \$350. OS 5-9842. A

PACKARD, 1947 7-passenger limousine, \$175. PL 6-1755. A

REFRIGERATOR, Coldspot, freezing unit, \$20. OS 9-3974. A

JEEP, 1944, new paint, \$500. OS 6-8860. A

REFRIGERATOR, Admiral 11 cu ft. HA 9-7838. A

BOAT, Birchcraft 12', glassed, controls, windshield, marine decking, 10-hp Scott-Atwater engine, American trailer. OR 2-8466. A

BINOCULARS, 7x50, coated lens, case, \$25. RE 3-5505. A

MOVIE CAMERA, Revere 88, 8 mm, f:2.8 lens, leather case. OX 8-2607. A

GUITAR, Silvertone electric, amplifier, \$70. DA 4-5532. A

## FOR SALE

REVOLVER, H&R .22 9-shot, 4" barrel, leather holster, \$27. FR 9-3128. A

FURNITURE, end & coffee tables, 3, mahogany, \$15 ea; dinette set, 8-pc Monterey-type, \$30. PL 4-7334. A

HOUSEHOLD FURNISHINGS, heater, aqs, \$15; screen door, \$10. PL 7-2619. A

TRANSMITTER, Heathkit DX35, 50-watt microphone output, 65-watt c-w output, 7150-kc crystal, instruction booklet, \$50. LA 2-8173. A

WASHER, 1957 Speed Queen, cost \$349, \$150. GE 1-4233. A

FORD, 1951 2-dr Custom, overdrive, \$350. OR 7-8538. A

PLYMOUTH, 1951 Concord 2-dr fast-back. FR 9-9616. A

COOKING UTENSILS, Druware, green, 1-2- & 3-qt saucepans, casserole, butter melter; Magnolite, 1- & 3-qt saucepans. Box 1509. A

CADILLAC, 1951 limousine, \$1150. PL 7-2719. A

WASHER, Maytag manual, square tub, \$20. HA 9-7879. A

FURNITURE, coffee table, blonde; combination lamp-end table; occasional chairs, 2; \$20. OS 5-5355. A

DOG, Boston terrier, AKC, likes children, \$50. OS 5-9695. A

ENCYCLOPEDIA, Britannica, 24-vol set, year books, case, \$175. OS 5-0867. A

PONTIAC, 1950 2-dr, \$250. PL 4-1596. A

CHEVROLET, 1953 Bel Air, black & white, equity \$100. OS 6-4652. A

TUNER, Heathkit FM, \$35. DA 9-4168. A

COOKING UTENSILS, Kitchenkraft, alum. 22-pc set, serving tray, vegetable slicer, cost \$180, \$80. FR 9-5088. A

APPLIANCES, facial massager, electric; scalp heat-treater, electric; \$2 ea. Box 1510. A

TYPEWRITER, Underwood, overhauled, \$27.50. TE 5-1596. A

WROUGHT IRON, 2 pcs, 4'x5', \$7. GR 7-1539. A

WATER SOFTENER, \$100. FR 6-0645. A

FORD, 1925 Model T, \$450. DA 9-8887. A

TRAILER, teardrop-type, sleeps 3, alum. exterior, stove, ice box, 20-gal water tank w/hand pump, \$250. FR 6-5656. A

DESK, executive-type, \$20. FR 8-1609. A

TV SET, Columbia, 17" console, mahogany. PL 9-0694. A

ENGINE, West Bend 2.5-hp Bulldog, rebuilt, \$20. HA 9-5445. A

FLUTE, Gretsch C, new pads. Box 1508. A

CHILDREN'S CLOTHING, girl's, sizes 4-6; boy's, sizes 6-18 mo. FR 9-9616. A

DE SOTO, 1948 Deluxe 4-dr. PL 1-2784. A

STENOTYPE MACHINE, 10 yr old, \$35. DA 6-7528. A

PICKUP, 1953 Ford F-350 1-ton, 4-speed trans., spotlight, heavy-duty springs, \$650. DA 3-5900. A

DODGE, 1947 4-dr, extras. FR 5-5298. A

RANGE, 1955 Gaffers & Sattler 32", center grill, timer, storage drawer, \$75. FR 7-2159. A

MERCURY, 1952 convertible, Merc-O-Matic, new brakes & top. OS 5-8851. A

LOTS, 2, Hemet; 80'x165'; \$1600; 70'x165'; \$1500; both \$3000. OR 1-8625. A

HOUSE TRAILER, 1954 Royal 31', 2-bdrm, furnished, cabana, tub & shower, \$2000. DA 3-4379. A

BABY EQUIPMENT, playpen w/royal blue sun canopy; stroller, red & white candy-striped; bathinet; \$20. FR 9-9616. A

MATTRESS, w/box springs, full size, \$10. PL 4-4384. A

## WANTED TO BUY

METER, Heathkit GD-1B arid-dip, repairable. DA 9-4286. B

RADIO, short-wave, prefer Hallicrafter. PL 7-2719. B

TEXTBOOK, General Chemistry, Dr. Linus Pauling, 2nd edition. FR 9-9616. B

TEXTBOOK, Seaplane Design, Wm. Nelson, or similar textbook. DA 3-5900. B

TV SETS & RADIOS, FM, old. DA 6-7528. B

WEIGHT LIFTING EQUIPMENT. DA 3-4720. B

BUICK, 1953 Super Riviera. FR 4-7685. B

TRAIN EQUIPMENT, American Flyer. PL 4-6818. B

CRIB-PLAYPEN, portable. PL 4-5909. B

DRAFTING MACHINE, Bruning. FR 9-3128. B

DARKROOM OUTFIT, 2 1/4x3 1/4 enlarger, timers, trays, tanks. LO 9-5647. B

## FREE (to be given away)

DOG, Beagle, 5-yr old spayed female, shots & license, good watchdog, needs large yard. TO 7-5589. D

MAGAZINES, Time & Newsweek back issues. FR 9-9616. D

PUPPY, cocker-water spaniel, 7 mo old, shots, loves children. FR 9-6083. D

## RENTALS OFFERED

SHARE HOUSE, desire young man to share with same, near Northrop, \$45 mo. FR 4-3971. E

APARTMENT, 2-bdrm, furnished, La Tijera-Freeman area; for 2, \$110; 3, \$115; 4, \$120 mo. DA 9-1955. E

APARTMENT, 4-rm, large, near Northrop, \$65 mo. PL 6-6177. E

APARTMENT, 1-bdrm, unfurnished, Alondra Park, newly decorated, adults, off-street parking, water paid, \$70 mo. OS 6-7860. E

## RENTALS OFFERED

ROOM, private home in Hermosa Beach, full privileges, \$10 wk. FR 9-6767. E

APARTMENT, bachelor, furnished, utilities paid. OS 6-5484. E

APARTMENT, bachelor, furnished, near Northrop, utilities paid, \$50 mo. OS 6-3326. E

APARTMENTS, 1-bdrm, unfurnished, \$85 mo; w/stove & refrigerator, \$87.50 mo. OR 7-4995. A

ROOM, 1 woman, kitchen privileges or board. Box 1501. E

HOUSE, 2-bdrm, furnished, fenced yard, landscaped, near shopping, no pets, child OK, \$125 mo. FR 9-3741. E

APARTMENTS, 1-bdrm, modern, hardwood floors, disposal, carport, heated pool, near Northrop, from \$100 mo. OR 7-0757. E

HOUSE, 2-bdrm, unfurnished, near Northrop, \$70 mo. OS 5-9596. E

ROOM, private bath & entrance, \$12 wk; for 2, \$8 ea. DA 4-4750. E

APARTMENTS, 1-bdrm, \$50 & \$75 mo. PL 6-1053. E

APARTMENT, 1-bdrm, unfurnished, above garage, water paid, \$68 mo. PL 4-7001. E

APARTMENT, 3-rm, furnished, disposal, laundry room, adults, near Imperial & Broadway. \$70 mo. PL 5-9022. E

APARTMENTS, 1-bdrm, carport, w/w carpeting, disposal, water paid, \$80-\$100 mo. OS 5-4501. A

HOUSE, 1-bdrm, furnished, Lennox, adults only. OR 2-2269. E

APARTMENT, 1-bdrm, unfurnished, disposal, garage, adults, near Northrop, \$75 mo. OR 4-3511. E

APARTMENT, 2-bdrm, unfurnished, upper, disposal,



# NRC Ballots Name Council Helmsmen; Corwin New President



**PROUD MOMENT** — Bill Aldrich presents Gene Boggess with past prexy's pin.



**PRESIDENT** — New NRC president, Boyd M. Corwin, is shown with Mrs. Corwin.



**VICE-PRESIDENT** — Ronald F. Wiggins, pictured with his wife, is now NRC veep.



**SERGEANT AT ARMS** — With Mrs. White, is Thomas E. White, sergeant at arms.



**TREASURER** — New NRC Keeper of the Cash is John W. Felder, jr., with his wife.

## Ex-Sea Bees Set Annual Dinner At NRC Annex

Norcrafters who are ex-Sea Bees of World War II plan their second annual dinner dance at the NRC Annex on Saturday night, May 3. Last year's affair proved to be such a success that it was decided to make the get-together an annual affair.

All former Sea Bees at Northrop and their ladies and friends are invited to make reservations by calling Personnel Activities, extension 2784. Tickets at \$3.50 per person include dinner, dancing and refreshments.

Caterers have been engaged to handle the chow line and live music is scheduled for dancing. Pub call will be at 6:30 p.m. with dinner served at 7:30.

## More GMW

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 8)  
LOMITA BLVD. & CRENSHAW, Lomita. J. K. AUBRY (7732-27048, ext. 2369). 12-8

(Zone 12)  
SUNSET & MARQUEZ, Pacific Palisades. (Consider car pool.) M. MANN (5234-50115, ext. 781). GL 4-8581. 12-12

(Zone 13)  
BEVERLYWOOD & ROBERTSON, West Los Angeles. (Desire 2 driver-riders for car pool.) S. E. WEINSTEIN (5234-50116, ext. 781). 12-13

7:30 a.m. — 4:15 p.m.

(Zone 4)  
HACIENDA & VALLEY BLVD., La Puente. (Desire car pool.) FLOYD WORDEN (9542-43220, ext. 1471). 13-4

(Zone 5)  
LINCOLN & GRAND, Anaheim. (Established car pool desires 3 more driver-riders; have lot pass.) WALTER A. DAY (8920-27542, ext. 1564). JA 7-4270. 13-5

## NRC Good Time Table for May

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

### ARCHERY (days), Jack Duer

Meet Wednesdays, 6:30 p.m. Archery classes now in session.

### ARCHERY (nights), Paul Randolph

Meet Wednesdays, 12:15 p.m.

### ART CLUB (days), Forrest Ayst

Meet in Annex Thursdays, 7 p.m. Models furnished by NRC. Sculpture class meets Wednesdays, 7:30 p.m.

### BIBLE STUDY, Roy Stahl

Plant 1—Daily, 11:30-12:15, Tool Design Bldg.; 11-11:45 a.m., 5566 Conf. Rm. Plant II—Mon. & Thurs., 12-12:45 p.m., Conf. Rm. 2. Eng. Bldg.—Daily, 12-12:45 p.m., Reliability Conf. Room. Torrance—Tues., 12:15-1 p.m., Bldg. K2 Conf. Room.

### BOAT CLUB, Fred Wheeler

Meet 1st Wednesday of month, 7:30. Night shift meets 3rd Thursday of month, 2:30 p.m. Water Ski Club Days meets 3rd Thursday, 7:30 p.m.

### BOWLING (days), Lloyd Forstrom

Openings still available in summer leagues starting April 29.

### BOWLING (nights), Charlie George

Openings still available in summer leagues starting April 29.

### BOY SCOUTS, Stan Morris

Sea Scouts, Intermediates, Cub Scouts. All Norcrafter boys welcome.

### CAMERA CLUB (days), Steve Marsteller

Meet 1st, 3rd & 5th Wednesdays, 7:30. Election May 7.

### CAMERA CLUB (nights), Gene Beck

Meet 1st & 3rd Saturdays.

### CAMPING CLUB, Fred Brant

Meet 1st Monday. Outing May 3, O'Neil Park.

### CHESS CLUB, Bill Henderson

Plant-wide tournament in progress.

### FISHING (day and night)

Register fish for NRC awards with card available at Personnel Activities.

### GEM & MINERAL CLUB (days), Raymond Cole

Mineralogy class now in session. Meet Thursdays, 7-9 p.m. Election May 22. Death Valley field trip, April 26-27.

### GEM & MINERAL CLUB (nights), Victor Lincoln

Meet 1st & 3rd Wednesdays, 1 p.m.

### GOLF (days), Charles Penegar

Rio Hondo Tournament, May 11. Leagues start April 28.

### GUN CLUB (days), Carl Turner

Meet 3rd Wednesdays, 7:30 p.m. Pistol shoot at Torrance, 2 p.m., May 4. Rifle shoot, Torrance, 1 p.m., May 18.

### MIXED CHORUS, Bill Porter

Meet Tuesdays, 7:30 p.m. All Norcrafters welcome.

### MODEL RAILROAD, Jack Wilson

Meeting every Thursday evening from 7-10 p.m. in Annex. Visitors welcome.

### PHILATELIC, Eugene Richardson

Meet 2nd & 4th Mondays, 7 p.m. Coin collectors welcome.

### RADIO CLUB (days), Phil Kramer

Meet last Thursday in Annex, 7:30 p.m. Radio Code Class, Wednesdays, 7:30 p.m. NRC's Station is W6VPZ.

### RADIO CLUB (nights), Merwin McGrew

Meet last Thursday, 1:30 p.m.

### SKET CLUB, Harold Bowers

Meet every other Saturday at Long Beach Dominguez Gun Club on Artesia Blvd., 10:30 a.m., May 10 & 24.

### SKI CLUB, William Loomis

Outing to Mammoth, May 9-10. Meet 2nd & 4th Wednesdays, 7:30 p.m.

### SKIN DIVING (days), Ralph Gonzales

Meet 3rd Monday, 7:30 p.m.

### SKIN DIVING (nights), Lillian Kemble

Meet 3rd Wednesday, 1 p.m.

### SOFTBALL (days), Ken Klier

Practice games Mondays & Fridays, Sportsmen's Park; Wednesdays, Rosecrans; 6 p.m.

### SPORTS CAR CLUB, Jack Kirkpatrick

Meet 2nd Thursday, 7:30 p.m.

### SQUARE DANCING, Roy Jackson

Beginners class starting 2nd, 3rd, 4th, and 5th Sundays, Gardena Barn, 15016 Daphne St., Gardena, 3-6 p.m. Regular Sessions 1st, 2nd and 4th Sundays at 8 p.m.

### SURF FISHING, John Pawlicki

Meet 1st Tuesday of month, 7:30 p.m.

### TOASTMASTERS 212 (days), John Langdon

Meet every Thursday evening, 6:30 p.m., Western Avenue Country Club.

### TOASTMASTERS (days), Howard Cornelius

Meet every Monday evening 6:15 p.m., Western Avenue Country Club.

### TOASTMASTERS (nights), Ray Grish

"Gondolier," corner of Imperial & Prairie.

## FOR THE LADIES

### BOWLING (days), Joan Sitauer

Summer leagues starting.

### BOWLING (nights), Mary Minnaugh

Summer leagues starting.

### GIRL SCOUTS, Helen Maupin

Mariners, Intermediates, Brownies. All Norcrafter girls welcome.

### TOASTMISTRESS, Vicki White

Meet in NRC Clubhouse Board Room, 1st & 3rd Thursdays, 7 p.m.

### RIDES OFFERED

7:30 a.m. — 4:15 p.m.

(Zone 14)  
SLAUSON & CRENSHAW, Los Angeles. T. E. EWING (5161-52748, ext. 1577).

8:00 a.m. — 4:45 p.m.

(Zone 4)  
STANDARD & IMPERIAL, South Gate. (Desire car pool.) ROBERT J. LANDERS (1400-54984, ext. 2641). LO 6-5773. 15-4

ORANGE & DEL AMO, Long Beach. (Desire car pool.) W. H. COVERT (1500-31601, ext. 2041). GA 3-1363. 15-5

ARTESIA & ATLANTIC, North Long Beach. (Desire car pool.) RICHARD E. PROUT (3543-31057, ext. 710). GA 3-3661. 15-5

(Zone 9)  
SILVER SPUR RD. & WHITEFOX DR., Rolling Hills. (Desire car pool.) B. B. WILLIAMS (3473-43629, ext. 2655). FR 8-4764. 15-9

### RIDES OFFERED

8:00 a.m. — 4:45 p.m.

(Zone 14)  
RODEO & SANTA BARBARA, Los Angeles. (Established car pool.) K. SHERMAN (2871-43479, ext. 1384). AX 3-7849. 15-14

3:45 p.m. — 12:15 a.m.

(Zone 11)  
SEPULVEDA & MARIPOSA, El Segundo. D. FORBES (5421-55171, ext. 1359). EA 2-0626. 16-11

(Zone 13)  
SEPULVEDA & SUNSET, West Los Angeles. (Via Sepulveda.) JOHN F. DE MASO (5449-39240, ext. 1366). 16-13

4:45 p.m. — 1:15 a.m.

(Zone 12)  
PICO & LINCOLN, Santa Monica. STANLEY KAMHOLTZ (5221-54891, ext. 2203). EX 3-9076. 18-12



**NO STARVING ARTISTS IN GARRETS, THESE**—Focusing on the tangible recognition of talents evidenced in their entries in the NRC Purchase Prize Art Show, the winning artists are, from left, Erling Hendrick, Class B 2nd Prize; Bob Peck, Class B 1st Prize; Marie Sturm, Class B Honorable Mention; Stanley Santee, son of Norcrafter Lulu Clark, Class A 1st prize; Carole Lindeman, daughter of Norcrafters Henri and Alyce, Class A 2nd prize; Nancy Reardon, Class A Honorable Mention; and Milo Griffin, Class A Honorable Mention. The checks are being held by Gene Boggess, former NRC president. Other artists selected in the judging but not shown, are Jay Truax, 10-year old son of Norcrafter Eddie, Juniors 1st prize, and Tom White, Class B Honorable Mention.



YOU'LL HAVE TO EXCUSE MY FRIEND FOR NOT TALKING, IT'S NOT THAT HE'S UNSOCIAL - JUST SECURITY CONSCIOUS!

## Softballers Start Warmup

Dust off the Louisville Sluggers and oil the mitts—there's still time for individual or team entries in the NRC-sponsored men's softball program.

Warmup for league play began last Monday. Day shift practice games are scheduled at Sportsmen's Park on Mondays for the National League and on Fridays for the American League. Pacific Coast League practice is on Wednesdays at the Rosecrans diamond. First ball of each three-game evening is tossed at 6 p.m.

One more team is needed to round out the night shift league. Prospective players should contact Personnel Activities, extension 2784, immediately.

## BOAT CLUB HOLDS ANCHOR DRAG

The NRC Annual Anchor Drag and Inaugural Ball is slated for this Saturday.

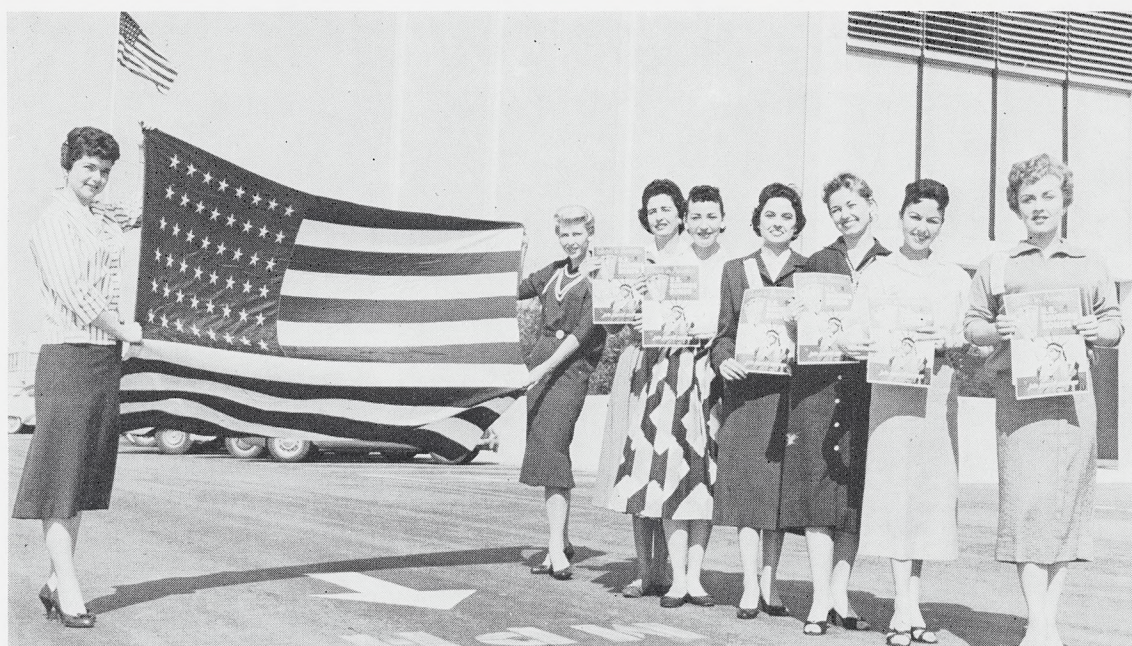
Retiring Commodore Steve Sabo will officially relinquish the Boat Club helm to the newly-elected Fred Wheeler.



Share in America

# TODAY TOMORROW and FRIDAY

Buy Bonds



**BANNER-BEARERS FOR BONDS**—Representative of the 450-plus department clerks who attended the pre-Savings Bonds Drive meetings are, from left, Fay O'Brien, 2812; Shirley Sutherland, 9542; Gerry Coleman, 6002; Marjorie Lovette, 5351; Bettie Farmer, 8840; Kathy Talkington, 6001; Pat Harrison, 5502; and Marlene Collin, 2580. At meetings, clerks viewed prizes ranging from electric barbeque to Philco hi-fi music center console.

## Northrop at Science Fair



**SCIENTISTS OF THE SIXTIES**—If the interest generated by Hawthorne High School's Science Fair is an indicator, the next decade will be known as the Scientific Sixties. Shown above is Northrop's all-Division exhibit, eliciting comments by an instructor to his group of high schoolers.

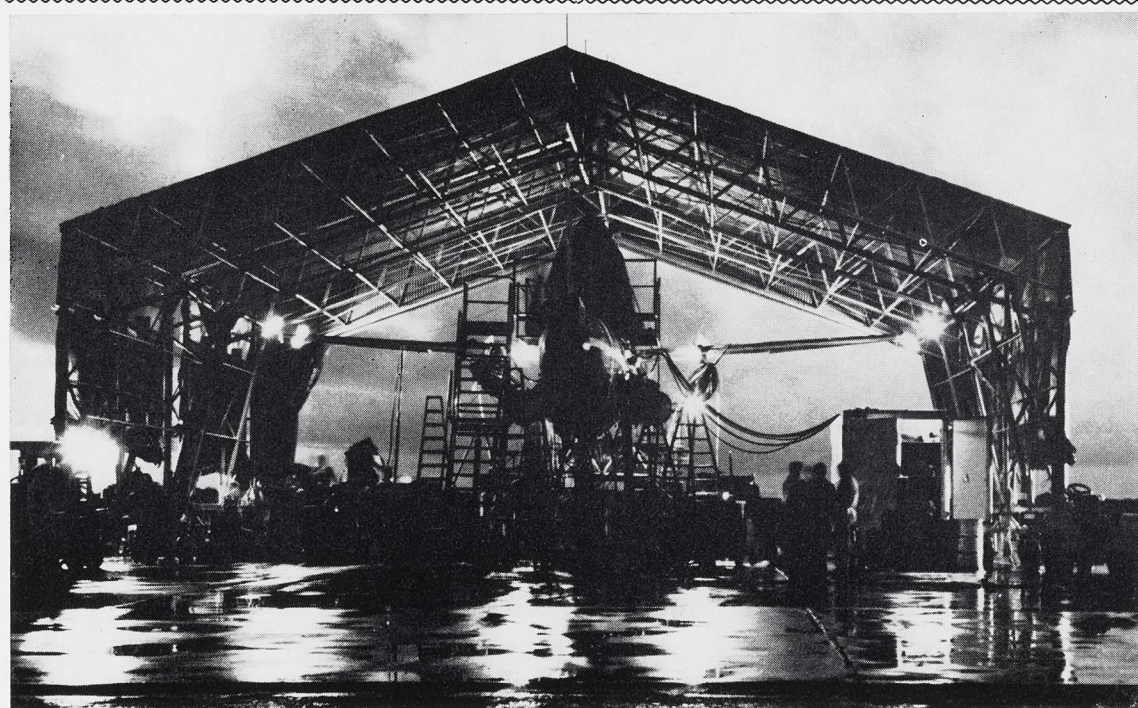


**NORTRONICS FIRST** — Dr. William F. Ballhaus presents first Nortronics 15-year pin to Amos Adams, leadman in Manned Aircraft Flight Test department, LAX.

## Northrop News Pictorial



**TALKING BILLBOARD**—Cecil Callaway, Suggestion Award Plan supervisor, and Lee Johnson, Safety Engineer, pose beside Northrop prize winner of Gimmicks and Gadgets contest. Event took place at recent 1958 Safety Congress.



**LONG HOURS**—Florida Norcrafters count down a Snark prior to launch. It had been raining and it will rain again but the hangar keeps the Cape Canaveral weather out and protects Norcrafters and their check instruments. People work carefully. Reliability is a must and Ascension Island is 5000 miles away. The time of day or time of night is no consideration. Recent launches have been zero-houred at near 3:30 a.m.



**MEETING AT DENVER**—Norcrafters Gwynn H. Robinson, assistant to Northrop International vice-president and general manager, left, during recent Denver meeting of Air Academy Foundation, discusses topics of the agenda with Major General James E. Briggs, superintendent, Air Academy; Colonel William Barrett Taylor, assistant chief of staff; and Colonel S. D. McElroy, chief of staff. Robinson is one of nine directors of Foundation. Organization is civilian—purpose is to further aims of Academy.





**LAX ACES OF IRON, BIRD AND CELLULOID BALL**—Fronted by mastery mementos are, standing, from left, Red Hanna; Stan Suter, Nortronics, new NRC El Segundo-LAX vice-president; Ira Cravens; George Brittingham, new LAX chief NRC rep; C. J. "Chuck" Gilbert, base administrator. Kneeling: Dale Moreland, Ken Pannabecker, Vic Moore, Bob Ewing, Jack Sowards, Jim Reynolds. See Page 5.

## NORTHROP

### NEWS BRIEFS

Nike-Hercules and Datico will be given a full-scale development program leading to a specific prototype with possible follow-on production for automatization of Nike-Hercules checkout equipment . . . Dr. W. F. Ballhaus, vice-president and general manager of Nortronics, advises that, following negotiations with Bell Telephone Laboratories, Whippany, New Jersey, and Western Electric Company, Burlington, North Carolina, arrangements were made with Redstone Arsenal for one complete Nike-Hercules Weapon System—a seven-flatcar shipment—to be shipped to Nortronics-Anaheim to support a one-year automatic checkout equipment development program. The project will apply Datico principles to the Nike-Hercules Weapon System components and subsystems to make this system as completely automatic as is economically and technically feasible. Benefits targeted through use of Datico are highly improved percentage of missile readiness plus outstanding betterment in system maintenance and operational capability . . . Nike-Hercules is the prime product of three great American companies. Bell and Western Electric are famous for their many years of service to the world in the fields of communications and electronics and as pioneer producers of electronic equipment of all kinds. Bell developed the Nike missile system as prime contractor. Western Electric manufactures the guidance, radar and checkout equipment. Douglas Aircraft, equally outstanding for their leadership in the aircraft industry, builds the missile airframe, launcher and support equipment.

**PRODUCT PLANS** — A coordination of product areas that the Northrop Incorporated Divisions—Northrop Division, Nortronics, Northrop International, and Radioplane—intend to pursue during the next five years is being carefully established through the office of P. W. Timberlake, Corporate vice-president, Organization. "Plans for both research and development and product manufacturing will be delineated by each division," stated Mr. Timberlake. "The pattern established will form a basis for preparation and submittal of Corporation-wide budget proposals and will also constitute the Corporation's long-range direction."

**FINAL CLOSE-OUT**—Final close-out of the last F-89D and F-89H production airplanes has been reported by Al Morgan, vice-president, Contracts. Termination negotiations constitute a highly important business phase on all contractual obligations. It is during this end reckoning that overruns, underruns, and all other phases of the contractor-customer associations are reconciled. Under such contracts as those governing the F-89's, final termination serves to establish amount of incentive and total earnings are then determined.

**ADDITIONAL QUOTES** — Al Morgan, vice-president, Contracts, reports that Northrop has quoted on additional outer wings and fuselage aft sections for the Boeing KC-135 and on McDonnell 101 aft sections.

**PROPERTY ACCOUNTABILITY**—Dan Hill, Northrop treasurer, advises that the first report has been published from studies under way to determine adequate control of Northrop and Air Force property. First action taken has been to assign responsibility for Class A and Class B property under the Finance Division with Colonel Ralph Lockwood, formerly assistant to the base administrator, Palmdale, in charge. Class A property consists of real property, buildings, land and similar facilities. Class B is production machinery and equipment. Studies continue on GFP, tooling, and other property areas to ascertain proper functional alignment.

(See NEWS BRIEFS, Page 2)

## BOND CAMPAIGN ENDS

### New Retirement Booklets For All Norcrafters Friday

#### First Checks Received for College Aid

Northrop's matching contributions plan has evoked immediate response from Norcrafters.

Evidencing their approval of this unique feature of the aid-to-higher-education program, Fred Barthels, Standard Tools, and Kenneth Pannabecker, LAX, tied for the honor of first contributor under the auspices of this plan. The identically-dated checks were received in the same mail.

Barthels, alumnus of the University of Arizona at Tucson. (See COLLEGE, Page 3.)

Northrop has initiated a new and far-reaching innovation in retirement plans—a major advance in the concept of company benefits—it was revealed by Edgar R. Means, retirement administrator. (See Northrop News, January 15, for first announcement.)

Designed to protect Northrop personnel from the loss of individual dollar purchasing power which accompanies inflation, Northrop's new plan will revolve around a variable annuity.

A pamphlet to be released May 9 will explain the new plan in detail.

Previously, retirement benefits were on a fixed dollar basis. Each year a Norcrafter accumulated a certain number of dollar (See RETIREMENT, Page 3.)

### NORCRAFTERS CONTINUE TO BUY BONDS

The Company-wide Share in America bond-buying drive came to a close last Friday after an extension of one week. The extension was by popular request and permitted late buyers to get in before the deadline with added purchases to raise their department achievement totals.

During the period April 14 through May 2, all departments and Divisions increased their bond-buying percentages.

The drive was sparked by department clerks throughout and, at close of business last week, reports indicated that the goal of 75 per cent was nearly a reality in many areas.

Although the drive is over, the convenience of signing up for automatic payroll savings will continue as in the past. Any Norcrafter who did not sign up during the drive may do so by contacting his department clerk.

Feature of the Savings Bond payroll deduction plan is that the regular amount set aside can be adjusted to fit personal budget.

U. S. Savings Bonds are currently earning the highest interest rate in the history of the bond program.

### Pellerin to Contracting Officer Post

Maxwell G. Pellerin has been appointed Air Force contracting officer and chief of the Contracts Division, it was announced by Colonel D. A. Simcoe, Air Force Plant Representative.

Coming to Hawthorne from Radioplane in Van Nuys, where he served as administrative contracting officer, Mr. Pellerin suc-



**THE VERY FIRST**—Matching checks with Tom Darden, Industrial Training Administration chief, are, left, Fred Barthels and Kenneth Pannabecker. They were first contributors to education under the recently inaugurated matching contributions plan. See story above for more details.

### Beryllium—Space Metal Under Northrop Research

#### Play It Safe Program for Norcrafters

Play It Safe is the keynote of the NRC-inaugurated safety program.

Designed for the protection of Norcrafters in NRC activities, the program is also intended to encourage safety habits in the home.

Play It Safe is the first fully organized industrial recreation safety program, according to Charles Boyle, chief, Personnel Activities and Services Administration.

It is a program that could very well gain national recognition in all industries where recreation (See PLAY, Page 4)

Northrop Aircraft is negotiating with Air Materiel Command for a research and development contract to develop methods of obtaining extrusions of beryllium.

Beryllium is the wonder metal of outer space and ultra high-speed vehicles. Almost as light as magnesium but, pound for pound, three times as strong as steel, beryllium has the important advantage of retaining its strength at temperatures approaching 1500°F.

Under the proposed contract, Structures Research and Production plan to build test structures for exhaustive testing of beryllium to determine its static and dynamic capabilities.

Development of beryllium for practical use will be an essential part of Northrop's space flight program. Materials Advisory (See SPACE METAL, Page 2)



MAX PELLERIN

ceeds R. J. Knight who died recently at the age of 64 after a short illness. Mr. Knight, who was highly respected throughout aircraft industry for his management ability and knowledge of administrative affairs, had served four years at Northrop.

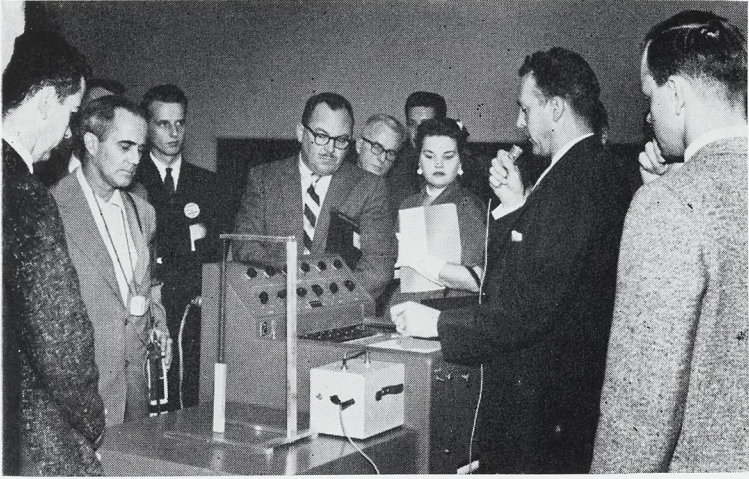
(See PELLERIN, Page 2.)

### BLOOD BANK VISIT

(See Page 3)



# COMPADAC Press Visit and Space Preview



**PRESS VISIT** — Northrop hosted the press at an unveiling of COMPADAC, new

computing and datamation center, last week. Lee A. Ohlinger, COMPADAC chief, with mike, explains analog computers to, left to right, M. J. Murphy, McGraw-Hill; Gilbert Close, Automation Age; Dr. Smith, IBM; Julian Hartt, L. A. Examiner; C. W. O'Malley, IBM; Stan Atherton, IBM; Marjorie Nail, Aviation Week. As tour progressed, scribes saw marvels unfold.



**FLIGHT TIME** — Northrop Engineering Vice-President George Douglas uses model

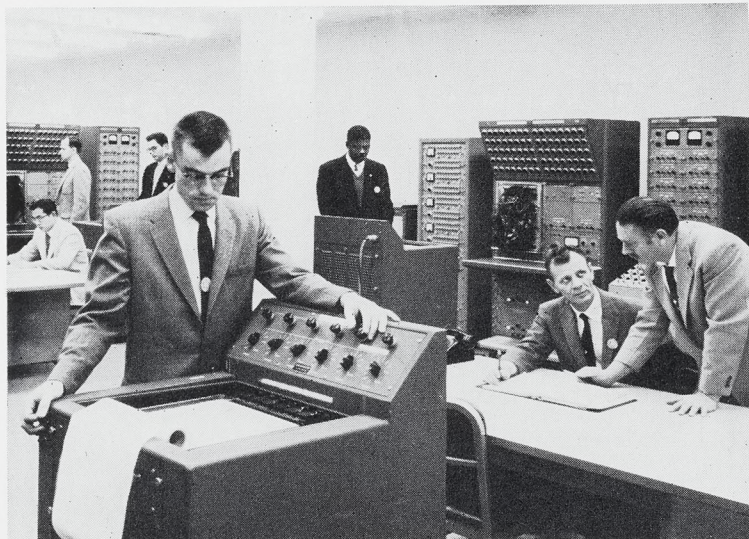
of N-156F to illustrate how thousands of hours of "flight" time are logged via computer techniques even before plane is built. Design stage "flights" ensure a perfect product. In background with Mr. Ohlinger is Norcrafter computer operator L. W. Riddell.

**VERSATILITY** — Alene Harris, Western Metal Working, challenges digital computer

to game of tic-tac-toe, as Lee Ohlinger, left, discusses multiple IBM 704 capability with Jack Meyer, Product Engineering; C. W. O'Malley; and C. W. Green, Computers and Automation. This computing marvel is located at the heart of Northrop's Engineering and Science complex. In one hour the 704 can handle accurately enough work to keep an ordinary desk computer calculating for 180 years.



**MACHINE WINS** — After beating newsmen at tic-tac-toe COMPADAC's spectacular IBM 704 digital computer entertained with musical tunes, programmed the interception of intercontinental ballistic missiles and plotted the course of a flight around the moon. COMPADAC can solve several complex problems at a time. Sometimes five differential equations are solved simultaneously to determine the stability of aircraft and missiles in design stage.



**ANALOG SERVICE** — COMPADAC integrates both digital and analog equipment into a single facility, a novel feature of this highly advanced center. Staffing the Analog Computing Service are Norcrafters, left to right foreground: supervisor W. H. Taylor, M. R. Burdette, and Bob Chapman. In the background, left to right, are Josi Fujimoto, Paul E. Williams, W. L. Winocur, and W. H. Justice. COMPADAC personnel have key roles in Northrop design, development plans.

## AF PROCUREMENT MEETING HEARS DR. BALLHAUS

Dr. Wm. F. Ballhaus, vice-president and general manager, Nortronics, was principal speaker at the recent Los Angeles Air Procurement District meeting held at the Los Angeles Junior College of Business auditorium.

Dr. Ballhaus was introduced by Colonel Clair Peterson, AFPR, Douglas Aircraft.

His talk of over one-hour duration was entitled, "The Anatomy of the Winged Missile."

## Space Metal

(Continued from Page 1)

Board predicts that within 10 years the flight vehicle industry will be using 1000 tons of beryllium per year.

Joe Chinn, senior engineer of Producibility Engineering states that "using beryllium reduces structural weight to as low as half that of a system using conventional metals."

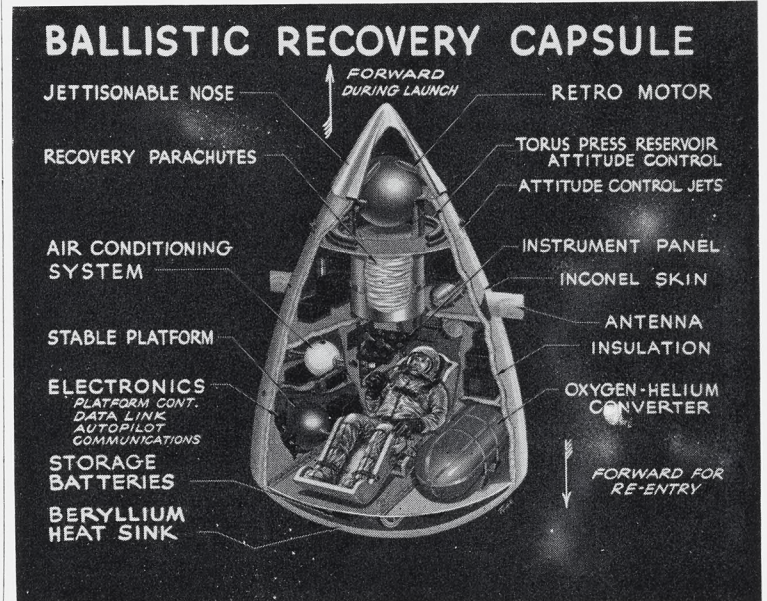
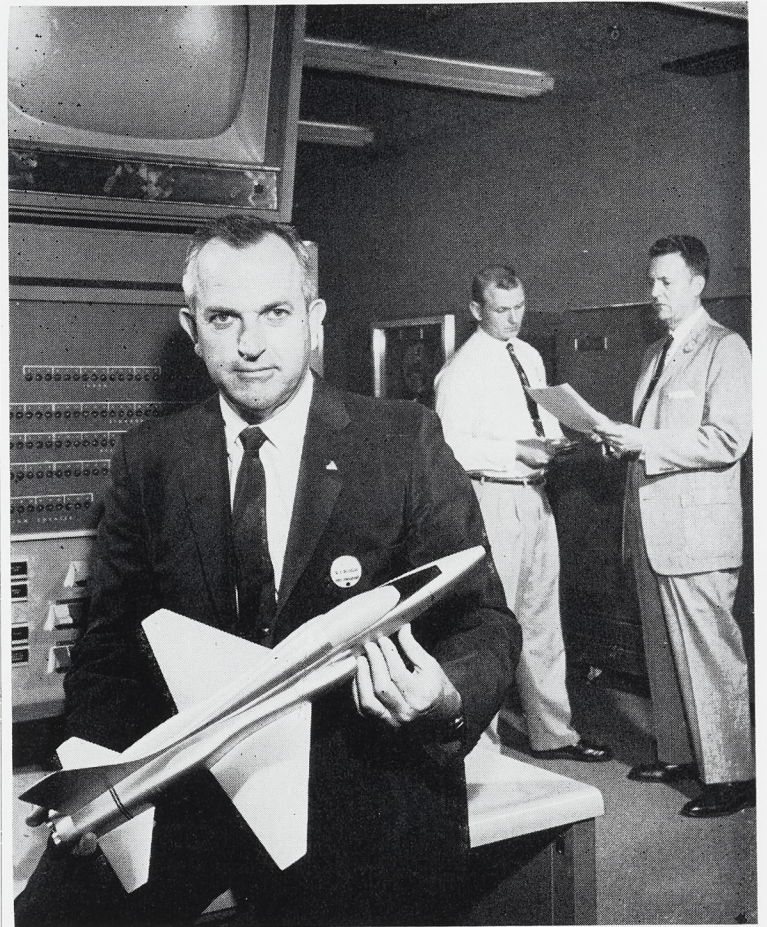
"For every pound of structural weight saved, the weight of the power plant can be reduced by approximately three pounds."

Northrop is presently fabricating and testing beryllium bolts. One of the best properties of the metal is its stiffness. Beryllium has six times the stiffness of aluminum at both normal and elevated temperatures.

Because of its light weight, great strength, and high heat and corrosion resistance, beryllium is a favored metal in the age of space vehicles.

But since it is costly to mine, has to be refined under vacuum to keep out the impurities that make it brittle, and is even more difficult to shape than titanium, its use at present is limited.

The proposed research and development contract would give Northrop responsibility for confronting these problems and harnessing the qualities of beryllium for productive use.



**SPACE LAB** — First revealed by Vice-president Douglas, press visitors had premiere of Northrop-designed satellite vehicle for testing man's reaction to outer space. Artist's conception shows passenger watching instrument panel from reclining position. COMPADAC has established path the manned space lab would follow in returning to earth. Program calls for orbiting lab within three years.

## NEWS BRIEFS

(Continued from Page 1)

**TO FRANCE** — Dick Nolan, Northrop vice-president, Manufacturing, and Mike Creamer, chief, Northrop Manufacturing Program Planning, flew to France last week to confer with industrialists and French government officials on Northrop International and Northrop Division business proposals.

**BOARD OF DIRECTORS** — Northrop's Board of Directors met last week for its regular monthly meeting. Among the various topics on Division and Corporate affairs scheduled for the agenda, report was made on unrestricted finance grants in the aid-to-higher-education program. Grants were to Stanford Engineering School, \$1500; California Institute of Technology, \$1500; USC Engineering School, \$1500; Pomona College, \$500; and Independent Colleges of Southern California, \$5000.

**Northrop News**

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# Red Cross Bloodmobile At Northrop - - May 21

Norcrafters and Nortronics personnel will replenish their blood bank account next May 21, it has been announced by Charles Boyle, chief, Personnel Activities and Services.

This visit will accommodate personnel particularly from the areas of Plants One and Two and the Engineering Center.

The Red Cross bloodmobile will come to the Clubhouse for that day and, as in the past, Norcrafters may make appointments through their department clerks to visit the bank. Clerks will also make arrangements for transportation.

The Northrop blood bank needs all-out support this time, Boyle stated. Last year—1957—1444 pints were drawn out by Norcrafters, while only 924 pints

were contributed. For the first time Norcrafters had overdrawn their account.

"We want to balance our account with the Red Cross," Boyle said. "We should go over the top this time and create a surplus. All Norcrafters, whether they are donors to the blood bank or not, are entitled to call for blood in time of need. This also applies to Norcrafters' families."

"If there is any doubt in a person's mind about his own health condition before becoming a donor, the Red Cross bloodmobile carries staff physicians and nurses who examine all persons before blood is taken."

Free refreshments are furnished by the Red Cross.

See your department clerk for all particulars.

## Pellerin - -

(Continued from Page 1)

The Air Force Contracting Officer is responsible for the administration of all Air Force contracts at Northrop as well as other prime contracts with the Air Force for which Northrop is a subcontractor.

"Anything to do with performance under the contract is administered through this office," Mr. Pellerin stated. "Costs, payments of fees, approval of subcontracts, approval of procedures such as purchasing, accounting, control of government property."

"Anything that costs the government money, either directly or indirectly, we handle."

Mr. Pellerin considers that the most interesting aspect of his job is "the feeling that you are accomplishing a need and seeing the results in weapons systems which the Air Force has scheduled into its inventory and which will be effective deterrent weapons."

He has been in civil service for 22 years and in contracting work for 15 years, taking time out only to fly 48 missions as a navigator-bombardier in the South Pacific during World War II and to serve as Air Intelligence Officer during the Korean conflict.

**REFRESHMENTS**—Norcrafter donors relax with "coffee-and" provided by the Red Cross, gratified with the knowledge they have banked life-saving blood.



**TRANSISTORIZED LISTENING**—Accepting congratulations of Charles Boyle, chief, Personnel Activities Administration, Lee Bean beams upon having won bond drive 60-per cent drawing and the Philco transistor radio. Lee is department clerk for Nortronics Liaison Engineering Electronic Support.



## College - -

(Continued from Page 1)

designated his alma mater as donee. Pasadena College was the beneficiary of Pannabecker's check.

The Northrop checks matching these contributions were only the first in the program to lend support to institutions of higher learning by encouraging Norcrafters to make private contributions.

The limiting of grants to a minimum of \$5 and a maximum of \$500 is intended to enlist the small contributions that might otherwise be foregone in the belief that they were too small to be helpful.

To be eligible for the matching grants, checks made out to the selected universities or colleges are to be directed to Industrial Training Administration, Northrop Division. Additional information may be obtained by calling extension 2436.

## CARL McCREADY TO CHAIRMAN ELECTRONIC MEET

Northrop's Carl F. McCready was selected by the Electronic Components Conference to chair their session on "Component Reliability Evaluation — The Economic Aspect."

Mr. McCready supervises the Parts Application section of Engineering Reliability.

Purpose of the session at the Ambassador Hotel Conference was to establish a dollar value for reliability improvement and to analyze the cost of achieving this improvement.

**HOT TIME IN THE OLD PATIO TONIGHT**—Ella Post, Preliminary Design department clerk, is shown with Harry Clark, Personnel Activities, admiring the electric barbeque that is now hers. As Norcrafter bond pledges reached 55 per cent, the general drawing singled out Ella for award.



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 9)  
CALLE MAYOR & SUSANA, Torrance.  
BILL SMOTHERSON (5211-39772, ext. 1920). FR 5-2959. 2-9

(Zone 10)  
MANHATTAN AVE. & PIER, Hermosa Beach. JOHN E. LASSWELL (5340-15883, ext. 2557). FR 6-5711. 2-10

7:30 a.m. — 4:15 p.m.

(Zone 5)  
STUDEBAKER & ROSECRANS, Norwalk. (Established car pool.) G. L. DURAN (6382-26139, ext. 2617). UN 4-7204. 3-5

(Zone 12)  
LINCOLN & MANCHESTER, Los Angeles. DONNA L. PRATT (2410-14407, ext. 1752). OR 2-6537. 3-12

MANCHESTER & SEPULVEDA, Los Angeles. SUE DALTON (5120-53206, ext. 701). OR 4-0441. 3-12

LINCOLN & WASHINGTON, Venice. (Desire ride home only.) DEE KYLE TRAVIS (9420-52021, ext. 2151). EX 7-5663. 3-12

(Zone 13)  
HAWTHORNE BLVD. & 105th ST., Lennox. J. E. CRAWFORD (2823-12646, ext. 556). OR 1-4091. 3-13

OVERLAND & SANTA MONICA BLVD., West Los Angeles. D. J. SNYDER (5141-31433, ext. 1881). GR 9-0408. 3-13

(Zone 14)  
PRAIRIE & ARBOR VITAE, Inglewood. D. M. STADELWISER (8910-54858, ext. 1720). 3-14

8:00 a.m. — 4:45 p.m.

(Zone 3)  
HUNTINGTON & ROSEMEAD, Arcadia. (Desire car pool.) JAMES HAUSER (5142-50107, ext. 1761). HI 7-8028. 5-3

(Zone 5)  
GRAND & LA PALMA, Buena Park. (Established car pool; via Rosecrans.) JOHN J. UPTON (2592-26672, ext. 2031). LA 2-6430. 5-5

### RIDES WANTED

8:00 a.m. — 4:45 p.m.

(Zone 7)  
COMPTON & VAN NESS, Gardena. FRANK K. McREYNOLDS (3160-30665, ext. 1983). DA 4-0581. 5-7

(Zone 8)  
CRENSHAW & 174th ST., Torrance. SANDEE GAW (1400-52272, ext. 2641). DA 4-8789. 5-8

(Zone 13)  
VENTURA & WOODMAN, Sherman Oaks. (Via Coldwater Canyon, La Cienega or La Brea.) FRED J. KRATZ (5142-31580, ext. 1761). ST 9-9648. 5-13

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 4)  
PARAMOUNT & WASHINGTON, Rivera. (Via Paramount, Florence, Van Ness.) J. H. HAGERMAN (5515-20505, ext. 1233). OX 2-5860. 12-4

7:30 a.m. — 4:15 p.m.

(Zone 5)  
STUDEBAKER & ROSECRANS, Norwalk. (Established car pool.) G. L. DURAN (6382-26139, ext. 2617). UN 4-7204. 13-5

8:00 a.m. — 4:45 p.m.

(Zone 3)  
HUNTINGTON & ROSEMEAD, Arcadia. (Desire car pool.) JAMES HAUSER (5142-50107, ext. 1761). HI 7-8028. 15-3

(Zone 13)  
VENTURA & WOODMAN, Sherman Oaks. (Via Coldwater Canyon, La Cienega or La Brea.) FRED J. KRATZ (5142-31580, ext. 1761). ST 9-9648. 15-13

SANTA MONICA & CAMDEN DR., Beverly Hills. (Via Beverwil, National, La Cienega Frwy, Centinela, Broadway, Prairie.) JOHN M. ATKINSON (3372-29492, ext. 2675). CR 6-3534. 15-13

3:45 p.m. — 12:15 a.m.

(Zone 13)  
SEPULVEDA & SUNSET, West Los Angeles. (Via Sepulveda.) JOHN F. DE MASO (5449-39240, ext. 1366). 16-13

## Retirement Booklets

(Continued from Page 1)

benefits. When he reached the age of 65, the number was totaled, and he would receive that number of dollars each month of his life thereafter.

Under Northrop's new plan, part of the benefits will be in a fixed amount, but part will vary from year to year.

The variable portion of the fund will be invested primarily in common stocks under the supervision of an Investment Board consisting of three members of the Northrop Incorporated Board of Directors: Edward W. Carter, chairman, president of the Broadway-Hale department stores; Lloyd L. Austin, president of Security-First National Bank; and Richard W. Millar, managing partner of William R. Staats and Company, Investors. Whitley C. Collins, Northrop president, and William C. McDuffie, chairman of Northrop's Board of Directors, are ex-officio members of the Investment Board.

The Investment Board will be assisted by outside independent investment counsel, a national firm of high standing.

All money paid into the fund is held in trust by the Chase-Manhattan Bank in New York, and is invested at the direction of the Investment Board. Therefore, as the market rises, the value of the fund rises and the individual shares are worth more dollars.

Benefits earned prior to August

1, 1957, are fixed benefits. Option cards will be distributed with the paychecks May 16, so that Norcrafters who want to convert one-half of the benefits earned up to August 1, 1957, to variable benefits may have an opportunity to do so.

On the card Norcrafters may elect to retain all credits accrued to August 1, 1957, as fixed benefits or to convert one-half of them to variable benefits. The option must be exercised on or before June 1.

Among the companies on the West Coast which have similar benefit plans are Boeing Airplane Co. and Aerojet General.

Northrop is the first major aircraft company in the Los Angeles area to extend the benefits of variable annuity to all payroll categories.

## SNARK—T-38 FEATURED IN AF DAY POSTERS

For the third consecutive year Northrop has offered to assist the armed forces in promoting Armed Forces Day. Poster art for over 1200 billboards has been donated by Northrop to publicize the theme of this year's May 17 observance: "Power for Peace."

In 46 states across the nation from San Francisco, California, to Presque Isle, Maine, and from Madison, Wisconsin, to Cape Canaveral, Florida, posters of the Snark, Scorpion and T-38 supersonic trainer will focus public attention on America's deterrent might.



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

PUPPIES, boxer-German shepherd, 3 mo old, tails & dewclaws cut, \$5-\$10. OS 5-9796. A  
REFRIGERATOR, Frigidaire apt-size, \$50. DA 4-7286. A  
TV SET, 17" 2-dr console, oak, \$30. EX 8-8365. A  
WASHER, Kenmore automatic, \$40. OR 1-2776. A  
VACUUM CLEANER, Kenmore upright, \$10. DA 4-7019. A  
REFRIGERATOR, Westinghouse 8 cu ft, \$60. OR 1-4720. A  
MOTORCYCLE, 1958 Indian, 15 cu in, \$550. OS 5-3056. A  
CAR SEAT, front split-type, 1941-48 Ford or Mercury, foam, new cover, \$10. DU 4-4017. A  
FORD, 1941 V8 4-dr sedan, \$85. Box 1604. A  
CABINETMAKING TOOLS, saws, planes, chisels, bits, clamps, files, hammers, tool boxes, others. PL 5-8836. A  
CABIN CRUISER, Alcraft custom-built 20' inboard, foam rubber mattress, galley, 6' sink, boarding ladder, 2 anchors, 2 1/2 yr old, 30 mph, \$2650. DA 6-1092. A  
TRAILER, 1953 Cardinal 14', alum., \$550. OS 5-0251. A  
DRAFTING MACHINE, Vemco, 24"x30" arms, 12" & 18" alum. scales, \$75. PL 9-8371. A  
BICYCLES, 2, boys' 26", lightweight, 3-speed, hand brakes, PL 2-9597. A  
GENERATOR, acetylene carbide, 25-lb sight feed, \$50. OS 5-2491. A  
HOUSE TRAILER, 16', electric brakes, gaucha-type bed, ice box, stove, 16-gal water tank w/pump, new tires, \$350. FR 2-4758. A  
PIANO, Storey & Clark spinet, blonde, flip-top box, electronic humidity control, terms, \$450. FR 5-4056. A  
SEWING MACHINE, 1958 Adler 152 portable, zig-zag & other attachments, \$115. FR 4-6003. A  
BEDSPREADS, twin-size, quilted brown taffeta, \$15 pr. OS 9-1025. A  
COUCH, sleeper, matching chair, rose & grey, \$30. OS 5-4333. A  
CHEVROLET, 1953 2-dr, 1 owner, Power-alide, \$625. GA 3-3661. A  
TEETERBABE, safety bars, \$5. DA 4-5112. A  
HORSE, pinto gelding, black & white, Western saddle & bridle, \$150. FR 8-1894. A  
FORD, 1957 Custom 300, T-bird engine, Fordomatic, white & green, equity \$400 & assume payments totaling \$1300. DA 3-0134. A  
RANGE, Kenmore 42", gas, 5-burner, griddle, \$75. DA 4-6023. A  
TRAILER, teardrop-type, sleeps 2, butane stove, ice box. FA 8-4537. A  
BOAT TRAILER, 2-wheel, 4" channel iron. FR 4-0770. A  
PONTIAC, 1949 sedan, 1 owner, \$195. OS 6-6074. A  
TRAILER, Kaumann Starfire 15', sleeps 5, butane lite, water tank & pressure pump, 3-burner stove, \$595. OS 6-3110. A  
GEMS, 2, unmounted, natural Black Star sapphires; 3.7 carats, \$11; 4.19 carats, \$12.50. FR 4-1191. A  
RANGE, Rheem Wedgewood 30", gas, 8 mo old, \$75. PL 5-2469. A  
HOUSE, 3-bdrm, 2 baths, beam ceilings, fenced yard, Fullerton, furnished or unfurnished. LA 6-4809. A  
STUDEBAKER, 1953 6-cyl sport coupe, Hydramatic, tinted glass, \$645. OR 2-1090. A  
FURNITURE, rocker, platform-type, \$15; desk, child's, \$5. DA 4-6748. A  
MERCURY, 1952, overdrive, FR 9-9261 before 3 p.m. A  
BABY EQUIPMENT, bathinet, bassinet, \$15. OS 5-9483. A  
RECEIVER, National Communications, \$25. NE 1-7650. A  
CABIN, Lake Arrowhead, furnished, equipped for all-year living, sleeps 10, utilities, paved road w/creek in front, \$2500 down & \$50/mo payments at 6%, \$4750. OR 4-1783. A  
PICKUP, 1950 Willys 1/4-ton 4-cyl, panel-type, F-head, \$250. FR 5-8263. A  
PLYMOUTH, 1947 4-dr, Southwind heater, new engine & trans, FR 9-6713. A  
PIANO, Richardson upright, modernized, \$350. FR 2-7696. A  
DODGE, 1955 Royal Lancer, power steering, equity \$250 & assume \$58/mo payments or \$1100. FR 6-4921. A  
LINK FENCING, 5' high, 61', gate. OR 7-5080. A  
PICKUP, 1938 Chevrolet, \$115. OR 1-0824. A  
OLDSMOBILE, 1950, assume payments. TE 5-6221. A  
RANGE, Western Holly gas, ariddle, Robertshaw oven control, \$50. OR 2-1731. A

## FOR SALE

ENCYCLOPEDIA, American Peoples, w/ children's set, great literary works & coffee table bookcase. EA 2-3665. A  
HOUSE TRAILER, 1958 Casa Manana 36', 2-bdrm, built-in Maytag automatic washer, air conditioner, forced air heating, extras, \$3895. OR 4-1098. A  
GYM MEMBERSHIP, Vic Tanny, 11 mo, \$50. OS 9-2038. A  
SUIT, boy's size 20, tan, \$15. OR 4-1847. A  
SIMCA, 1956 station wagon, \$1100. DA 4-1553. A  
TRAILER, 14' camping-type, sleeps 4, insulated, mahogany paneled, built-in ice box, stove & 20-gal water tank w/pump, \$425. EA 2-1379. A  
PICKUP, 1/2-ton camping-type, sleeps 4, butane stove, ice box, sink & wardrobe, sell as unit or by item. DA 3-2815. A  
LOTS, Apple Valley, up to 20 acres, 100' from water, terms. TO 9-6032. A  
BUICK, 1954 Riviera, overhauled engine, new brakes, Dynaflo, \$1250. DI 7-7229. A  
PLAY PEN, maple, pad, \$15. FR 2-3827. A  
HOUSE TRAILER, 1957 Universal 40', 36' glassed-in patio, Capehart color TV, hi-fi unit, cost \$9000, \$4000. OS 5-9586. A  
LAMP, pink hobnail, white milk glass shade, \$10. Box 1603. A  
FURNITURE, end tables, coffee table, glass tops, blonde modern, \$30. TE 2-4472. A  
CABIN CRUISER, 25', sleeps 2, Cadillac engine, glass bottom, Philippine mahogany, bait tank, built-in stove & ice box. \$3000. DA 3-7226. A  
BICYCLE, girl's 26", new tires & tubes, \$10. FR 4-6076. A  
BOAT, 14' Burchcraft Big Fisherman, 40-hp Scott-Atwater engine, electric starter, Tee Nee trailer, \$1100. OS 5-6809. A  
IRONER, Kenmore automatic, \$50. OS 5-0217. A  
MOTORCYCLE, Zundapp 200 cc, hand pump, Fiberglas helmet, aqaaes, \$150. OR 4-0063. A  
FAN, 15" window-type, portable, 4 blades, 2-speed, safety deflector grill, \$12. FR 5-8804. A  
RANGE, Chambers, gas, yellow, deep well, griddle, retained-heat cooking, \$125. DA 9-7725. A  
HOUSE, 3-bdrm, 1250 sq ft, hardwood floors, 2-car garage, redwood-enclosed patio w/bba, furnished or unfurnished, near schools and buses. DA 4-1876. A  
DINING ROOM SET, blonde, table, 6 chairs, buffet, \$65. DA 9-5788. A  
ENGINE, Wisconsin 7-hp, gas, overhauled, cost \$150, \$75. NE 5-5394. A  
OLDSMOBILE, 1952 98 4-dr, overhauled engine, new brakes, \$700. RE 3-4836. A  
FURNITURE, complete apt set, 9 mo old. OR 2-8004. A  
CAR PART, distributor, 1953-54 Chevrolet, converted to Mallory dual-point ignition, \$10. PL 6-8658. A  
PHOTO EQUIPMENT, projector, 2x2 Mansfield 300-watt Airquipt automatic 120 88 mm. f:3.5 Wollensak lens, Kalart automatic flash, case, \$35. Box 1606. A  
ROTISSERIE, Roto-Broil 400 3-way automatic, spits, \$14.50. EX 8-4032. A  
NASH, 1955 Ambassador, 2 cars, \$200 down & 17 \$45/mo payments. OS 6-6956. A  
FIREPLACE GAS LOGS, 24", metal rack, \$7.50. GR 2-6621. A  
DINING ROOM SET, table, 5 chairs, buffet, \$65. OR 4-1136. A  
AIR CONDITIONER, G.E. 3/4-hp. TO 1-6238. A  
DINING ROOM SET, Duncan Phyfe, table, 6 chairs w/pads. PL 4-7798. A  
FREEZER, Ben Hur chest-type, 18 cu ft, cost \$500, \$350. DA 9-7924. A  
MOTORCYCLE, 1957 Matchless Scrambles, twin. \$650. OS 5-4262. A  
SETTEE, patio-type, redwood, cushions, \$10. FR 2-3827. A  
CADILLAC, 1939 opera coupe, 65,000 miles. RE 4-8822. A  
METROPOLITAN, 1957 hardtop, yellow & white. EM 6-8649. A  
CHEVROLET, 1948 4-dr sedan, stick shift, 1952 engine, \$125. OS 6-5158. A  
STUDEBAKER, 1951 Champion 2-dr, overdrive, \$65. UN 3-4067. A  
PLYMOUTH, 1947 4-dr sedan, \$45. FR 9-3857. A  
REFRIGERATOR, Coldspot 7 cu ft, new unit, \$45. PL 6-9594. A  
FORD, 1955 convertible, overdrive, light blue, white top. VE 8-2587. A  
CRIB, Babyline, mattress, \$20. DA 4-1240. A  
FURNITURE, Hollywood bed, frame, mattress, box springs; desk, chair, blonde; bookcase, blonde; \$60. DA 9-4837. A  
PACKARD, 1952 4-dr, 2-tone, Hydramatic, new tires, battery & brakes, overhauled engine, \$425. DA 3-7383 after 11 a.m. A

## FOR SALE

TV SET, Emerson 21", mahogany color, \$75. OS 5-3769. A  
HOUSE, 3-bdrm, 2 1/2 baths, den, Rolling Hills, corner lot, 2 fireplaces, 2300 sq ft, tile roof, custom-built, near elem. school, \$8000 down or trade, \$38,950. PL 5-5719. A  
CHILDREN'S CLOTHING, girl's, sizes 4-6, Teddy Bear coat, dresses, skirts; boy's, sizes 6-18 mo, suits, others. FR 9-9616. A  
HOUSEHOLD FURNISHINGS, carpet sweeper, ironing board, \$2 ea. Box 1610. A  
HOUSE, 2-bdrm, Lakewood, tile & hardwood floors, 2-car garage, \$500 down & \$98/mo. payments, \$12,500. FR 8-5001. A  
SKIN DIVING GEAR, luna, suit, guns, fins, mask, \$100. FR 9-9888. A  
BABY EQUIPMENT, crib, mattress, sheets, blankets, potty chair, hi chair, Jenny Lind maple bed, stroller. FA 8-6523. A  
FOLDING DOOR, 15', flexible, \$75. LA 2-7352. A  
DIVAN, Kroehler 6', matching chair, embossed mahogany trim, cost \$330, \$30. FR 5-9432. A  
RELOADING DIES, Lyman, w/310 tool; 30-06; 30-40 Krag; .38 Police Special; 32-20, w/bullet mold. Box 1607. A  
CROSLEY, 1949 station wagon, \$100. OS 6-0794. A  
FORD, 1931 Model A 2-dr sedan. Box 1608. A  
FORD, 1956 convertible, Fordomatic, white, \$1700. OR 8-8810. A  
ARCHERY BOW, Wonderbow, glass, 52-lb pull, w/12 matched custom arrows, \$25. DA 3-4932. A  
LOT, Big Bear Lake, Moonridge tract, near golf course & ski lift, \$990. OS 5-6587. A  
TRAILER, Higgins camping-type, sleeps 4, \$135. PL 6-9775. A  
HILLMAN MINX, 1950 convertible, cream, \$175. PL 5-6084 between 4-6 p.m. A  
WEDDING DRESS, size 13, original, short train, white silk & lace, underskirt, cost \$160, \$80. FR 5-0184. A  
CAMERA, 2 1/4x3 1/4 Speed Graphic, accessories, case, 2 developing tanks, \$135. DA 9-6894. A  
SHAYER, Sunbeam, lady's, turquoise, \$10. GL 6-2559. A  
TYPEWRITER, Royal Quiet Deluxe, portable, \$45. FR 4-6003. A  
MOTORCYCLE, Ariel Red Hunter, new engine & trans., \$285. GR 7-2995. A  
HOUSE, 3-bdrm, 1 1/2 baths, beam ceilings, fireplace, w/w carpeting, drapes, fenced yard, sprinklers, softener, appliances, north Torrance, GI resale, \$13,000 at 4 1/2%. \$19,900. DA 9-6404. A  
FORD, 1957 Custom 300 2-dr, Fordomatic, 2-tone, equity \$400, assume \$74/mo payments totaling \$1300. DA 3-0134. A  
ENGINE LATHE, 6" screw cutting-type, counter-shaft, belts, motor, reversing switch, 3 chucks, milling attachment, steady rest, turret & regular tool holders, cutoff tool holder, \$135. TO 2-3536. A  
TV PICTURE TUBE, 20CP4 20", \$15. LA 2-6929. A  
WASHER, 1954 Kenmore automatic, Suds-saver, \$25. FR 2-0787. A  
COLLECTOR'S ITEM, Colt Bisely Model 1872 .22 on .45 frame, nickel-plated, pearl grips. FR 4-3849. A  
CADILLAC, 1949 4-dr, new tires, 40,000 miles, \$495. PL 4-7891. A  
BOAT, 12' Fiberglass, Glenn L design, controls, trailer, Mercury Mark 20 engine. OR 7-3275. A  
POWER MOWER, reel-type, Briggs & Stratton engine, \$30. TE 5-4874. A  
FORD, 1947 coupe, Chevrolet V8 engine, Corvette cam, lifters, spring ported heads, \$400. OR 1-5137. A  
HOUSE, 2-bdrm & convertible den, 1 1/2 baths, Rolling Hills, built-ins, disposal fireplace, 2-car garage, GI sale, \$26,750. FR 8-2145. A  
PLYMOUTH, 1951 Concord 2-dr fastback, new paint & seat covers, leatherette interior. FR 9-9616. A  
FLUTE, Gretsch C, new pads. Box 1610. A  
PLYMOUTH, 1957 4-dr sedan, Powerflite, assume \$84.42/mo payments. KE 8-8770. A  
BUICK, 1946 Super 4-dr sedan, many new parts, take small tools as part. \$110. LI 8-0751. A  
MOTORCYCLE, 1956 Triumph Cub, \$275. OR 2-7074. A  
**WANTED TO BUY**  
LUGGAGE RACK, roof-type, 1957 Ford station wagon, under \$50. TE 2-9629. A  
TONNEAU COVER, 1955 T-bird, OR 8-0628. A  
TIRES, 6.50x16, PL 5-0863. B  
BICYCLE, boy's 24". OS 5-7831. B  
COUCH, small, modern. OS 5-6508. B  
SLIDE RULE, 8" binary circular. Box 1602. B  
PIANO, studio-type or baby grand. FR 8-5001. B  
MACHINE TOOLS, lathe, hydraulic jack, hydraulic press, power hack saw, saw blade welder. CI 1-0164. B  
WASHER, Maytag wringer-type, square tub. PL 7-2719. B  
PISTOL, .45 automatic, rebuildable. DA 3-5935. B  
TEXTBOOK, General Chemistry, Dr. Linus Pauling, 2nd edition. FR 9-9616. B  
**FOR TRADE**  
CAR PARTS, 2-barrel carb & manifold, 1955-56 Ford, trade for 4-barrel carb. OS 5-1350. C

## COST-OF-LIVING RAISE, MAY 5 FOR NORTHROP AND NORTRONICS

More than 12,000 personnel of the Northrop and Nortronics Divisions of Northrop Aircraft, Inc., received a 3-cent an hour cost-of-living raise, effective May 5.

The raise is based on a 1.7 increase in the Consumer's Price Index which reached 123.3 for the three-month period ended March 15, 1958.

The increase applies to Northrop and Nortronics, Anaheim, Pasadena, Edwards Air Force Base, Torrance, El Segundo, Los

Angeles International Airport, Holloman Air Force Base, and Patrick Air Force Base.

## Play Safe —

(Continued from Page 1)

programs are provided in the interests of personnel.

Unsafe practices, epitomized in the cartoon character Efas Yalp (see photo, Page 5), are spotlighted, together with suggestions as to how both the fun and the safety may be retained. Efas Yalp, of course, is Safe Play in reverse.

A Safetyman has been appointed for each NRC club. It is his duty to note areas in which safety problems, present or potential, exist.

Lee Johnson, chief safety engineer, will coordinate with the NRC Council all problems presented to him, with recommendations as to their solution. Red Tag reports sent to Johnson signal emergency conditions and will be checked out immediately.

Thus, this well-rounded program is set up for action from the ground floor up. With appointed club members alerted to the importance of safe play, possible hazards to Norcraft safety should be averted.

## FEDERAL GROUP TO NORTHROP—DATA PROCESS

Approximately 30 members of the Federal Production Management Association visited the Northrop Division last week to study the company's data processing system.

After a dinner in the Northrop cafeteria and a tour of the Yukon facility, the group was briefed on the purposes and methods of data processing.

Bill Cox, supervisor of Data Processing; Loren Nelson, tabulating analyst; and Bob Phillips, supervisor of Shop Loading, conducted the briefing in the Products Display Building.

## FOR TRADE

BICYCLE, girl's 16" sidewalk-type, trade for girl's 20". DA 4-6748. C  
CEMENT BLOCK MAKER, trade for hi-fi unit, small car or luqaqa trailer. LA 6-4809. C  
APPLIANCES, refrigerator, Philco 9 cu ft; stove, gas; trade for pickup. PL 6-5016. C  
FORD, 1958 6-cyl 2-dr, stick shift, black & white, padded dash & sun visors, trade equity for 1951-54 car. FR 9-9037. C  
TV SET, Hoffman 17" table model, blonde, 1 yr old, trade for 3-lens 8 mm movie camera or 500- to 750-watt 8 mm projector. DA 9-2355. C

## FREE (to be given away)

CRIB, 6-yr size, blonde birch, ST 9-5628. A  
DOG, cocker spaniel, black male, likes children. OR 4-8925 6-7 a.m. and 12-1 p.m. D  
CRUTCHES, DA 3-7383 after 11 a.m.. D

## RENTALS OFFERED

HOUSE, 1-bdrm cottage, stove & refrigerator, adults only, near Northrop, \$75 mo. OS 6-2793. E  
ROOMS, men, \$8 wk. OS 6-0496. E  
APARTMENT, 2-bdrm, furnished, near shopping & buses; for 2, \$110; 3, \$115; 4, \$120 mo. OR 8-8896. E  
ROOM, private entrance & bath; for 1, \$12 wk; 2, \$8 ea. DA 4-4750. E  
APARTMENT, 1-bdrm, unfurnished, upper, 600 sq ft, Pullman bath, disposal, hardwood floors, washer & TV outlets, child OK, near Northrop, \$65 mo. PL 8-4249. E  
APARTMENTS, 1-bdrm, furnished, Torrance, \$75. FA 8-9537. E  
APARTMENT, furnished, over garage, adults only, no pets, water paid, \$70 mo. PL 6-4878. E  
APARTMENTS, 1-bdrm, near Centinella & La Brea, garage, wash room, disposal, child OK, \$85 mo. OR 1-5688. E  
APARTMENT, bachelor, block from ocean, garage, utilities paid, \$55 mo. FR 4-2445. E  
SHARE APARTMENT, desire young man to share w/2 men, 2-bdrm, Crenshaw-Imperial area. OS 5-2305. E  
APARTMENT, bachelor, furnished, ocean front, adults, no pets, utilities paid, \$70 mo. FR 5-4402. E  
HOUSE, 2-bdrm, unfurnished, fenced yard, near Northrop, adults only, water & gas paid, \$65. OS 5-1350. E  
HOUSE, 3-bdrm, 2 baths, unfurnished, Lakewood, fenced yard, available May 24, water paid, \$125 mo. OS 6-7390. E  
APARTMENTS, 1- & 2-bdrm, unfurnished, near school & Northrop, children OK, \$77.50 & \$95. OR 7-4021. E  
CABIN, Lake Arrowhead, sleeps 8, 1 1/2 baths, 250' from lake, private beach, FR 5-2255. E  
APARTMENTS, 1-bdrm, furnished or unfurnished, w/w carpeting, carport, knotty pine kitchen, disposal, water paid, \$80-100. DA 4-8569. F  
HOUSES, 2-bdrm, unfurnished, disposal, no pet's garage, near Northrop, water paid, \$85 mo. OS 6-7330. E  
APARTMENT, 1-bdrm, partly furnished, 2-car garage, near Northrop, water paid, \$65 mo. OR 1-8475. E

## RENTALS OFFERED

APARTMENT, 1-bdrm, unfurnished, redecorated, disposal, garage, near Northrop & buses, older child OK. OS 5-8335. E  
HOUSE, 2-bdrm, unfurnished, Santa Monica, \$77.50 mo. EX 4-8559. E

## RENTALS WANTED

HOUSE TRAILER, 17'-20' late model. FR 2-3827. F

## LOST

SWEATER, orlon cardigan, pale green w/blue flowers, have matching sun dress. Box 1601. J  
SUNGASSES, prescription lens, purple frames. OR 2-8426. J

## FOUND

SUNGASSES, bifocals, green lens, brown & gold frames, found April 22. FR 4-7759. K

## PERSONALS

THANK YOU for the kind expression of sympathy at recent death of my dad. Dept. 6002's flowers & card were deeply appreciated. E. A. FIORITO. L

RIDER WANTED for 1-way trip to Chicago area May 16, share driving. OR 2-8004. L

THANK YOU to all the friends who helped me visit my dying father on the East Coast. I shall always remember your kindness. MORRIS J. DIETRICH. L

TENOR SAX MAN WANTED for established weekend gig, nonunion, double on clarinet, progressive dixie. FR 9-9616. L

## FOR SALE OR TRADE

TELESCOPE, Newtonian 8", new mirror, f:6.5 lens, equatorial mount, \$150. FR 5-8926. M  
FISHING POLE, 15' deep sea-type, bamboo, J. C. Higgins reel, sell or trade for fly casting rod. DA 4-6748. M  
OLDSMOBILE, 1949 4-dr 98, \$750 or trade for house trailer. LA 6-4809. M  
STUDEBAKER, 1952 4-dr, overdrive, \$225 or trade for electronic testing equipment. DA 4-1553. M  
CAR PARTS, dual-intake manifold & carbs, Edmonds, 1949-53 Ford or Mercury, \$25 or trade for weight lifting equipment. Box 1605. M  
FORD, 1956 Fairlane Victoria, Fordomatic, rear speaker, power steering, \$1550 or trade for sports car. RE 2-6340. M  
METAL LATHE, Craftsman 6", motor, floor stand, trade for oscilloscope, movie camera, movie projector, small piano, band saw or homelite plant. Box 1609. M  
BAR, mahogany finish, 2 Naugahyde stools, trade for Mr. & Mrs. dresser or power mower. OS 6-4355. M

Share  
the Ride





**SWEEPSTAKES CHOICE**—By popular ballot, the NRC Art Show sweepstakes award trophy was nabbed by David Botelho, Perspective Drafting illustrator. Dave's portrait captures the reflective mood of Major General John Hoskins, familiarly known to his men as "Uncle John." Conveying NRC congratulations is Boyd Corwin, president.

## Fire Laddies Parade Wares

Fire Service Day, May 3, set aside by Governor Knight to honor our firefighters, was the occasion for celebrations by Fire Departments throughout the state. The Northrop Fire Service organization, in cooperation with the Hawthorne Fire Department and the Naval Reserve Training unit in Hawthorne, participated by demonstrating industrial fire-fighting techniques. This included the combatting of magnesium explosions with water and oil fires with foam.

As part of Fire Service Day festivities, the new City of Hawthorne fire station at Northrop Field was dedicated.

Chief Joy West of the Hawthorne Fire Department presented a plaque to the Northrop Fire Service in appreciation of their part in this presentation and indicative of the harmony that exists between these two organizations.

## Sports Car Club Hosts Fun Rallye

Wheelers of both Detroit iron and foreign "bugs" will tangle in the Sports Car Club Fun Rallye May 17, with water skiing as an added attraction.

For the uninitiated, a fun rallye is based on the driver's skill in predicting his average speed for each leg of the projected route. Covered odometers rule out Q.T. calculations.

The rallye entourage is scheduled to start from Patmar's parking lot, Imperial and Sepulveda, at 7 a.m.

Destination is Lake Piru, where three boats will be available for water skiing for the remainder of Saturday and Sunday. Equipment will be furnished as part of the \$2 per person rallye fee and arrangements may be made for overnight accommodations.

Rallye participation may be reserved by calling Personnel Activities, extension 2784.

## GOOD SPORTS LIVE UP TO CLUB NAME

Two noteworthy and not well-publicized international organizations in which many Norcrafters participate are the Indoor Sports and the Good Sports.

Indoor Sports are handicapped persons who have joined hands for social and recreational pursuits. Good Sports donate their time to assist the Indoor Sports.

Allan (Dusty) Rhodes, USAF Quality Control, was recently the recipient of the Good Sports certificate of appreciation. Dusty, governor of Inglewood Lodge 580 of the Loyal Order of Moose, has often secured use of the lodge building for the Good Sports.

Additional information about either group may be obtained by calling Dusty, extension 651.

# SPORTS

*The Northrop News*

## Junior Bats Swing into League Play

One hundred fifty American Little Leaguers take to the Snark Field diamond, 120th and Van Ness Streets, this Saturday.

Opening day ceremonies at the park, christened Snark in honor of Northrop's rent-free arrangements with the Little Leagues, will be emceed by Bill Woolson, Public Relations. The traditional first ball will be tossed out by Mayor Zaccaglin of Hawthorne.

A large percentage of the pint-sized nines composing the American Little League are the 9- to 12-year old sons of Norcrafters. Representative of this preponderance, both league president, Bert Huisman, and vice-president, Leslie Cuir, are Norcrafters.

The following day, May 11, the Centinela Valley Pony League will dedicate its Northrop Park.



**ARCHERS BY DAY**—Night shift Archery Club members, pictured above at a recent shoot, are, from left, standing, E. R. Nealy, Janice Shirley, Bill Bruster, R. B. Trumble, J. Huber, John Janulewicz, commissioner Paul Randolph, M. English and H. Fear. Kneeling are, from left, Dale Warren, Mickey Mechling, E. Randolph and Chuck Shirley.

at the same large recreational facilities owned by Northrop.

Of the 120 13- and 14-year-old Pony Leaguers, Northrop is again well spoken for. League president is C. W. Fields, factory specialist in Process, Paint and Upholstery department.

## PLAY IT SAFE IS NRC PASSWORD



**ANTITHESIS OF SAFE PLAY**—Efas Yalp, bogie of every recreational activity, will never be admitted to NRC portals guarded by Charles Boyle, Harry Clark and Gene Boggess.

## Annual Awards For Northrop Scout Family

## LAXMEN NOT LAX IN SPORTS, REAP CROP OF TROPHIES

Three NRC-sponsored facility-wide tournaments have garnered trophies to 10 LAX athletes. See photo, Page 1.

Table tennis prowess was evinced by Dale Moreland, 1st, doubles; Ken Pannabecker and Vic Moore, 2nd, doubles; and Jim Reynolds, 2nd, singles.

Mastery of the shuttlecock brought top honors to Bob Ewing and Jack Sowards, 1st, badminton doubles. Ken Pannabecker and Vic Moore made it a pair again to cop second place.

The horseshoes clanged a hefty total for Bob Ewing and Dale Moreland, 1st, doubles; Ira Cravens and George Brittingham, 2nd, doubles; Red Hanna, 1st, singles; and Stan Suter, 2nd, singles.

Indicative of the high-pitched LAX interest in NRC activities was the recent balloting of Stan Suter to the office of NRC El Segundo-LAX veep. Stan's election is a first, both as a Nortronicsman and as an LAXman.



**FULL DRESS PARADE**—The Northrop Scout Family, smartly attired and flags on display, gathered in the NRC Clubhouse for the First Annual Awards Presentation. Girl Scouts and Mariners, Boy Scouts, Cub Scouts, Land Ex-

plorers and Sea Explorers snapped to attention as their outstanding members were honored. After the awards and recognition of advancements came the entertainment, all topped off with dancing and refreshments.



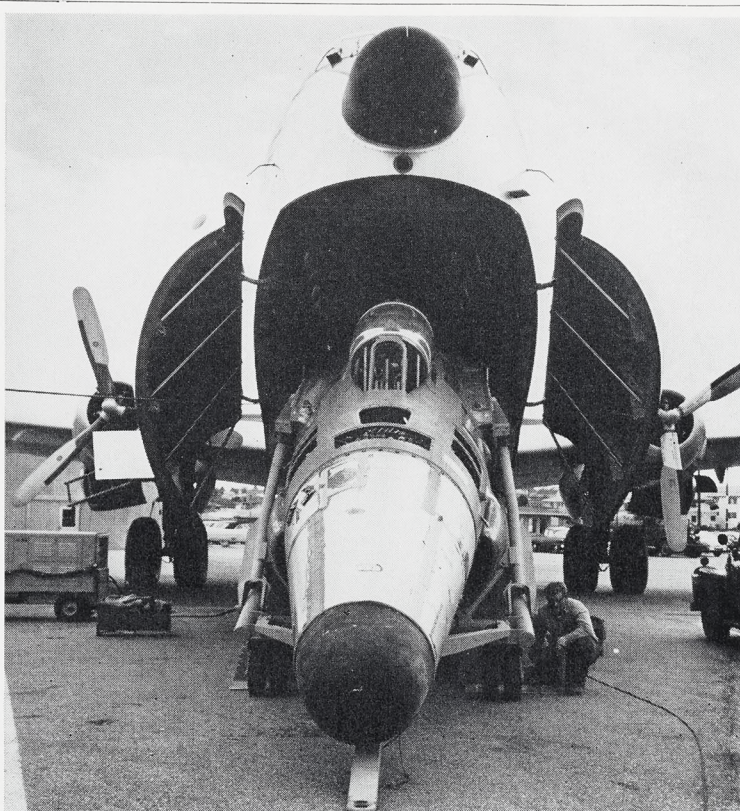


**MOON MAIDS**—Three lovely down-to-earth Norcrafters were selected as outer-space moon maids at the Personnel and Industrial Relations Association's monthly meeting which featured discussions of space technology. PIRA President Paul G. Kaponya, director of Industrial Relations for Cannon Electric Company, is receiving a picture of the Snark from, left to right, Janet Wills, Military Relations; Judie Pavao, Engineering Scientific Personnel Administration; and Barbara Cook, Fluid Dynamics Development.

## Scorpion Trailers

## Northrop News Pictorial

## PIRA Persuasion



**SCORPION SUPPORT**—The ability of Northrop-designed trailers to fit F-89 aircraft snugly into the mouth of C-124 transports was successfully demonstrated to the Air Force last month at Los Angeles International Airport. Clive Harris of Logistics Ground Support Equipment organized the display of two basic trailers, one for the fuselage and one for the wings, to haul F-89s back to AF mod depots.

## Atomic Radiation

**RADIATION COMMITTEE**—The role of radioactivity in Northrop's and Nortronics' future is outlined at a committee meeting by Bob Fortney, Nuclear Technology. Newly elected committee chairman Phil Brooks, Nuclear Technology is at right, and acting chairman Lee Johnson, Safety Engineer, left. Other committee members, back row left to right, Ed Rigalado, R. H. Johnson, Dick Carroll, G. N. Mangurian, Jim Rohland and Frank Ziegler. Front row Ann Steinle, Bruce Planck, A. G. Blair, W. L. Aldrich and Dr. Roger Mackey. All plant phases are represented.



## Air Force Previews Snark at Salt Lake City

**AIR POWER DISPLAY**—Northrop's SM-62 Snark, a new strategic air command weapon, was a major attraction at the Third Annual Air Power Symposium in Salt Lake City, Utah, under the sponsorship of the Utah Wing of the Air Force Association and the Salt Lake City Chamber of Commerce. In the background are the towers of the famed temple of the Church of Jesus Christ of Latter-Day Saints.

**HOOP STARS** — Plant-wide champions of the basketball court, the Fire Service team semicircles their department manager, Jim Bartlett. From left: Pete Donnenberg, Walt Graves, Geno Vitkus, Jim Rhoten, Andy McAllister, Vern Mullikin, Kaze Miya and Jack Burke, manager-captain. Jack Hare, now with USAF, was also a team member.

## Casaba Champions





## NEWS BRIEFS

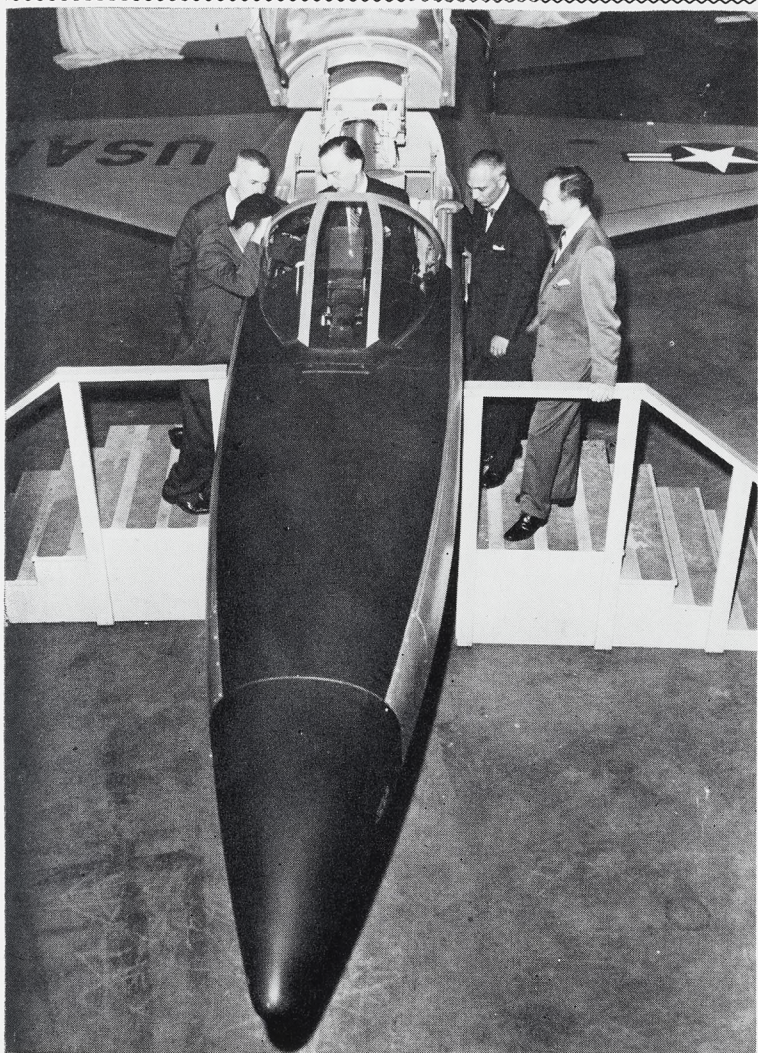
**FUTURE PLANS REPORT**—A complete preview of Northrop Division product plans was presented to a key Northrop audience last week by Welko Gasich, chief, Weapons System Development Engineering. Mr. Gasich, aided by slides, outlined the future concepts of the Company from immediate design advancements on the T-38 and the Snark SM-62 guided missile through manned satellites, round trip lunar flights, application of atomic energy to aircraft propulsion, and ballistic recovery of manned ballistic capsules. The report was prepared from studies by Advanced Design & Weapons System Analysis departments. Management Planning council will consider selected elements of the report on June 2, and decisions will be formed on which product phases will become part of Company one-year, five-year and longer-range plans . . . Stated Robert R. Miller, vice-president and general manager, "From the findings established in this long-range product analysis, we shall accurately plan our fiscal budgets for both R&D and for manufacturing to assure that our equipment and other assets are adequate for the task. This kind of operating intelligence is most valuable and is highly important to successful enterprise."

**SNARK FLIGHTS**—Another full-range distance Snark flight to Ascension target area has been accomplished . . . This was a 100-per cent Northrop launch. In June Northrop will combine forces with the 6555th Guided Missile Squadron for a joint series of launches. Northrop-trained Air Force personnel will increase their actual live-run experience.

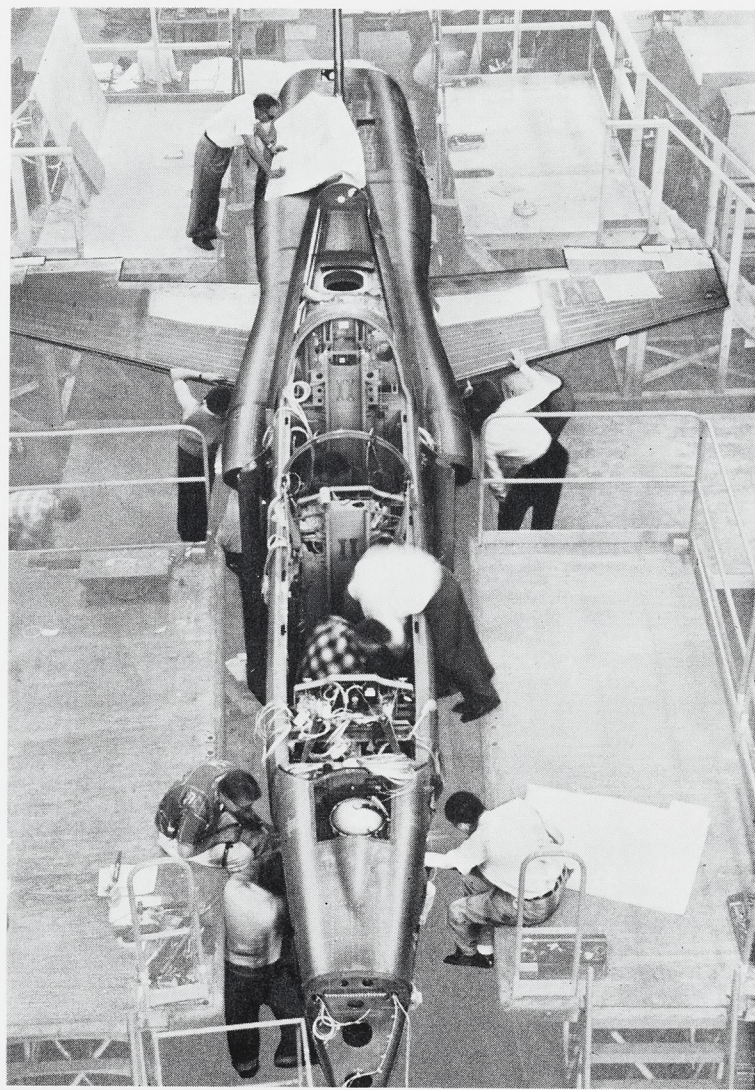
**FUNCTIONAL SURVEY**—Functional survey team consisting of Grant Macdonnell, Jack Hinchliffe and Ben Trump, is now in the process of a three-week department study to determine general essentiality of the various department functions . . . This three-man team is augmented by one member of the department under study . . . Survey report to General Manager Robert R. Miller will make recommendations as to areas that appear to be inefficient; duplication of other functions; uneconomical services or operation; or unsound practices in view of cost reduction targets. In functions that are considered in the foregoing categories, careful analysis will be made to establish corrective action—whether or not elimination, consolidation, or realignment might be effected. Illustration: Property Control (see News Briefs, May 7), a function formerly performed in three separate areas, is now centralized under one organization with resultant increase in efficiency and reduction in over-all costs.

**HOSPITAL MODERNIZATION**—George Gore, general counsel, announces that the Northrop hospital is now undergoing complete modernization and rearrangement. Area will be expanded. Air conditioning and other new equipment will be installed. An improved and more efficient admittance method will be sequenced and put into effect.

**EUROPEAN REPORT**—Manufacturing Vice-president Richard R. Nolan and Mike Creamer, chief, Manufacturing Program Planning, recently returned from Europe visit on N-156F phases of NATO community-of-effort manufacturing programs. (See News Briefs, May 7, 1958.) Nolan comments on European industrial picture: "Production organization closely parallels U. S. industry . . . They have made careful studies of U. S. plans and have adopted organization and practices which seem to them most efficient . . . Considerably more handwork is employed than in American plants (See NEWS BRIEFS, Page 3.)"



## T-38 Gets Her Wings



**THE TRAINER** gets her wings —Mating of T-38 wings to fuselage was assembly high point at Northrop last week. The wing was the largest component remaining to be mounted. After other installations are completed, the aircraft will go to Flight Test for final instrumentation. Supervisor S. E. Turner, YT-38 Prototype Operations, congratulates crew on progress being made. Note supersonic lines. Tips will add another four feet to T-38 overall span. Brakes and flaps provide the student-pilot with adequate control for safe normal speed landings.

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, May 21, 1958

## Norwegian Air Leader Sees N-156

Lt. General B. Fredrik Motzfeldt, commander-in-chief of the Royal Norwegian Air Force, visited Northrop last week for a briefing on the N-156F counter-air fighter and related family of lightweight military aircraft of interest to Norway as a NATO country.

Hosting General Motzfeldt for the Northrop briefing was J. Gilbert Nettleton, vice-president and general manager of Northrop International, the overseas marketing arm of the company.

General Motzfeldt expressed pleasure at being again in Southern California, recalling that he resided in Santa Monica for nearly a year in 1925-26 when he (See NORWAY, Page 2.)

**VISITOR** from Norway—Lt. General B. Fredrik Motzfeldt, commander-in-chief, Royal Norwegian Air Force visits Northrop Field on N-156F study and while here gets mockup check-out on the supersonic T-38 trainer. Escorting the general are from left, Ray Gardner, project engineer, Fighter Weapons Systems; J. Gilbert Nettleton, vice-president and general manager, Northrop International; Mike Creamer, chief, Northrop Manufacturing Program Planning, and Gwynn H. Robinson, assistant to general manager, Northrop International. (See above.)

## Engineering Referrals Pay Norcrafters \$100

The employment referral award plan has been reactivated for certain segments of the Northrop Division. It has been announced by A. A. Aitken, Engineering and Scientific Personnel Administration.

A 100-dollar referral award will be given to any Norcrafters

who refers a successful applicant in the classification of senior engineer or engineering specialist to positions open in the following branches of the Fluid Dynamics Group: Performance, Propulsion Systems Analysis, Aerodynamics, and Fluid Dynamics Development.

As future openings occur in selected areas, they will probably be included in the referral award program, Mr. Aitken stated.

The only conditions for the award are that the applicant must (See REFERRALS, Page 3.)

## Douglas Tells R&D Future Of Electronics

Experience gained in the Snark missile development program indicates that many more electronics manufacturers will find it necessary to undertake long range research and development programs.

This conclusion was voiced by George F. Douglas, Northrop vice-president for Engineering, in an address to the Aeronautical Electronics National Convention in Dayton, Ohio, May 14.

Northrop's new Nortronics Division is in the electronics business today because the company found it necessary to develop its own guidance system for the Snark, Douglas said.

"When the Snark missile program was started back in 1946-1947," he recalled, "several equipment manufacturers were contacted and all exhibited interest in the program; however, all (See DOUGLAS, Page 2.)

## Wage Raise In effect for Hourly Paid

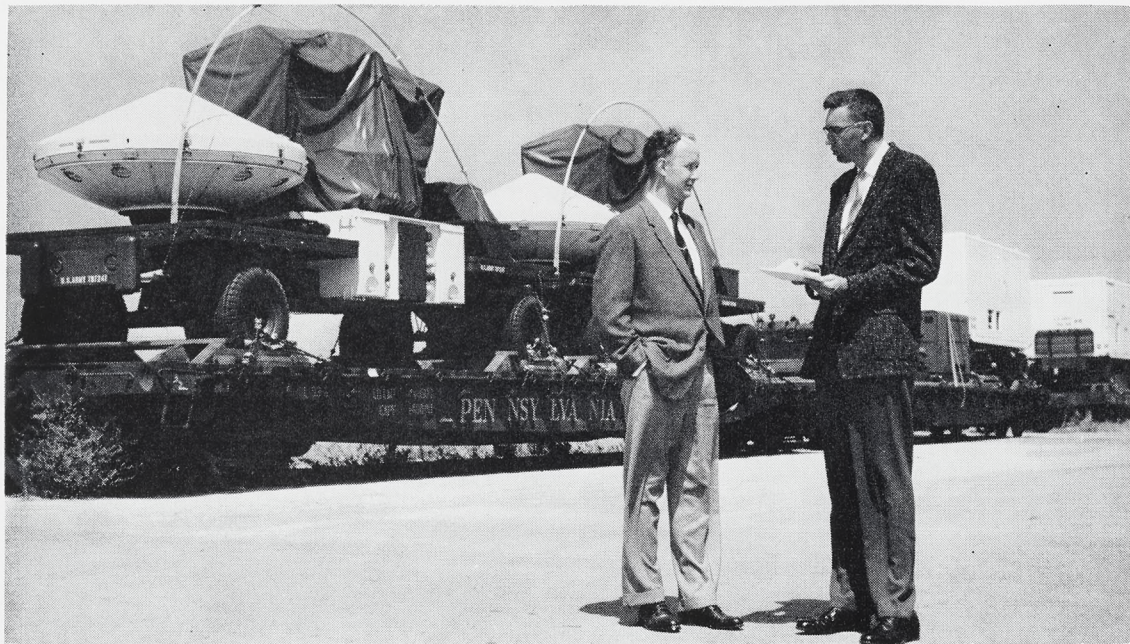
Northrop Aircraft, Inc., has announced that effective last Monday, May 19, increases of from 2 cents to 11 cents an hour would be granted to hourly-paid personnel at Northrop and Nortronics Divisions.

The increases went to over 13,000 persons and are in addition to the 16 cents an hour cost-of-living adjustments that have gone into effect progressively over the past one and one-half years.

Norcrafters and Nortronics folk will also be granted an additional "floating" paid holiday, set this year for December 24.

(See RAISES, Page 2.)





**SEVEN FLAT CARS**—Datco principles will be applied to Nike-Hercules, via a complete weapons system shipped to Anaheim last week. (See News Briefs, May 7, 1958). Nortronics-Anaheim Norcrafters, Bob Gray, right, and Jim Smith, confer on the project. Shipment came from Redstone Arsenal. Bell Telephone is prime contractor.

## Douglas--

(Continued from Page 1)

manufacturers contacted declined to bid.

"The reason was apparent. It was primarily a research and development program at that time, requiring the expenditure of a great many engineering hours with little or no promise of future hardware business.

"So Northrop had to develop a capability of its own to do the research and development work, which included 'bread boards' and small test runs. This capability was then gradually expanded to provide for low 'production runs' of flight test items, and now has been expanded further to cover production items."

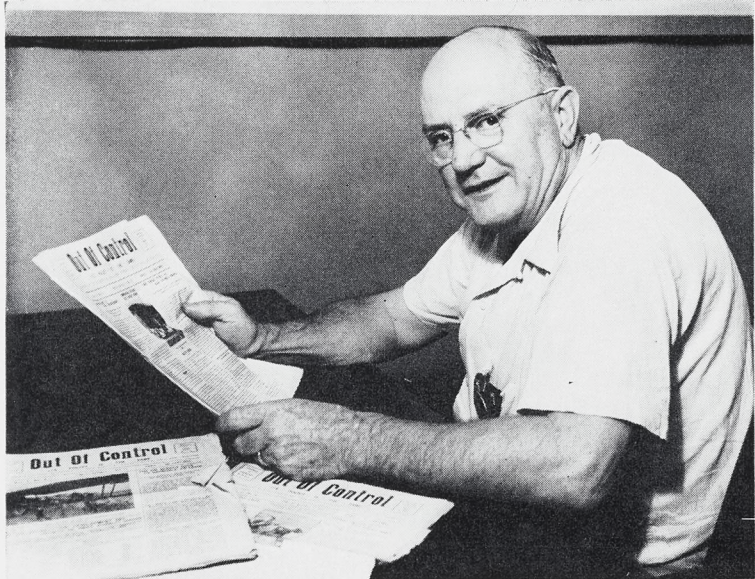
The Snark guidance system

experience, Douglas said, "points up a fact which should be recognized by all equipment manufacturers.

"The present-day weapon systems are becoming more and more complicated. This fact increases their cost immensely. This means that fewer and fewer numbers can be purchased if we are to stay within the military budget. Also, the development period will take a great deal longer.

"If the electronics manufacturers are to participate in these large weapon systems, they must (1) get into the act early, and be willing to devote ample development time to the solution of these problems, and (2) be satisfied with a smaller number of end items over a longer time span."

## Craig Broadus' Rare Issues Tell Story of Air Pioneers



**PIONEER PUBLICATIONS**—It's doubtful that planes will ever fly as high as New York's tall buildings—this pessimistic prediction appears in the World War I publications owned by Craig Broadus, Integral Tanks section.

Back in 1937, Norcrafter Craig Broadus acquired the three yellowing World War I journals illustrated above.

Not until later did he realize that these issues of "Out of Control", generated by our country's first Air Service pursuit group, represent the only editions published.

Covering the span from November 7, 1917, to December 13, 1918, "Out of Control" records the humor and the disaster . . . the hopes and the frustrations . . . of the group commanded

by Major Harold Evans Hartley. Among the pilots who formed this tiny nucleus of today's mighty air arm were men of great stature, such as Eddie Rickenbacker (then Captain).

Epitomizing the journalistic frustrations that abounded in wartime France is the tersely worded front page box:

*Published at the Convenience of the Printer.*

Silent testimonial to printer's convenience are the publication dates—

Three issues in 13 months!

## IAS MEETING TO HEAR BOUNDARY LAYER LECTURE

The high science topic, "Experimental Investigation of Supersonic Laminar Boundary Layer Stability in Transition", is the subject of the May 27 Institute of the Aeronautical Sciences meeting.

Dr. John Laufer of the Jet Propulsion Laboratory, California Institute of Technology, is slated to speak on this highly specialized aspect of aerodynamic research.

The 8 p.m. meeting will convene at the IAS Building, 7660 Beverly Boulevard, Los Angeles.

## Norway--

(Continued from Page 1)

first came to this country on a special assignment relating to the Douglas World Cruiser airplanes. He returned again in 1939 as head of the Norwegian delegation then considering Norway's need for a patrol bomber.

As a result of this latter visit, Norway became the first customer of the then newly formed Northrop Aircraft, Inc., by purchasing the Northrop N-3PB patrol bomber. The N-3PB—24 of which were delivered to Norway in time for service during World War II—earned a fighting record flown by Norwegian pilots against Germany.

An N-3PB was credited with assisting in the sinking of the German battleship Bismarck, while another was credited with capturing a Nazi submarine single-handed.

## Raises--

(Continued from Page 1)

Date for this additional holiday will be set each year by the Company.

"These increases are in accordance with Northrop's long-established policy of maintaining compensation, working conditions, and supplementary benefits on a par with those offered elsewhere in the local airframe industry," declared Whitley C. Collins, Northrop president.

Rates for salaried personnel are being studied.

The increases in pay apply to Northrop and Nortronics personnel at Hawthorne, Anaheim, Torrance, El Segundo, Pasadena, Lynwood, Los Angeles International Airport, Edwards Air Force Base, California; Patrick Air Force Base, Florida; Redstone Arsenal, Huntsville, Alabama; Holloman Air Force Base, New Mexico; and Amarillo Air Force Base, Texas.

## Colonel R. G. Lockwood To New Property Post

Colonel Ralph G. Lockwood has been appointed director of the newly established Property Management section, it was announced by Dan H. Hill, treasurer of the Northrop Division.

The growing complexity of Northrop's operation called for bringing property controls and records under a single head to expedite the work to improve utilization and accountability.

Property Management section will provide a single point of contact and responsibility with the Air Force in matters concerning property and its control.

For four years before coming to Northrop, Colonel Lockwood was assistant base administrator at Palmdale. A long-time pilot, he has served as an executive at Fairchild and Gulf Oil Corporation and in the Air Force he has

served as deputy for Materiel of the central Air Force Headquarters in Kansas City, Missouri.



**COLONEL LOCKWOOD**

and as a Wing Maintenance and Supply Group Commander.



**ELECTRONICS AGE PROGENY**—Sounding the death knell for handwritten commercial air tickets, Teletype Ticketing's first five ducats are examined by Walter A. Krieger, American Airlines sales representative; Kathryn Thornton, Pacific Tel & Tel service advisor; L. B. Key, Northrop Traffic travel coordinator; William C. Boudreau, American zone sales manager; Vi Horn, American flagship agent.

## Push Button Air Tickets—Newest Company Travel Aid

The innocuous machine in the corner hummed expectantly and then dit-dat-ditted until five American Airlines tickets had been issued to Norcrafters. See photo above.

This marked the first Northrop ticketing by the newest prodigy of the electronics age, American Tel & Tel's Teletype Ticketing. W. R. Zuetell, Traffic manager, reports that the previous method of securing tickets for Norcrafter business travel had necessitated handwriting each ticket.

Air reservations and confirmations have been and will continue to be handled by phone. However, on the day before a planned departure, the procedure had been that Traffic manually inserted the required flight information on a blank ticket provided.

Now this is as obsolete as a

quill pen. The day ticketing is due, the Mariposa-installed Teletype Ticketing, operated by a girl at American's reservation desk in downtown Los Angeles, types out the ticket—ready for use.

It was noted by Mr. Zuetell that this machine is operating on a circuit which will eventually include eight other large concerns. Teletype Ticketing is not only new to California—our circuit is the first in the country, other than for a short trial period in the East.

All major airlines participate in Teletype Ticketing through American's facilities. Pacific Tel & Tel advises that system refinements now in progress will provide each airline with individual transmitting equipment.

# Northrop News

Vol. 16

Northrop Field, Hawthorne, Calif.

No. 17

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CHARLES BARR, Director

CHARLES BRADFORD, Editor

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## NEWS BRIEFS

(Continued from Page 1)

... Workmanship is excellent ... They are keenly interested ... They could build the N-156 airframe, including landing gear and other hydraulics." Nolan and Creamer visited Belgium, Holland, Germany and France—talked with air industry leaders, top management, and manufacturing.

**FACTORY IMPROVEMENT**—Vice-president Nolan advises that efficiency in the factory during the past two months has recorded an increase in production pace, versus available manhours, from 58 per cent to 70 per cent, with the resultant betterment in the over-all position. "Although the immediate gain reflects better management and better realization of effort at the initial manufacturing level—fabrication and assembly—," he stated, "this improved picture will eventually be translated into cost results that will enable the Company to compete for business on highly advantageous terms." Important factor in the percentage increase is the work being done by Manufacturing Methods Engineering, chief, D. N. Petersen. Employing the use of random sampling of productive time ratio to inactive time in factory sections, Petersen's group plots these two factors against such elements as effort, manpower, budget realization, schedules, quality, and shortages. Where the curves show irrational patterns, corrective measures are applied. Measures are categorized into—random sampling and reporting time delay studies, over-all studies, special studies and applications, joint committee action, and methods improvement requests.

**MANAGEMENT COURSES**—Supervisory personnel will conclude in June first semester of "The Management Process" courses being offered at Los Angeles Trade Tech ... Over 400 persons will complete this first period of training. Classes will start again next fall. Members of top management scheduled to talk before the classes during the last weeks of this half are Dr. Ballhaus, George Gore, George Douglas and John B. Clark. Courses are off-hours. College credits are awarded.

**BURDEN RATE**—General Manager Miller has pointed out to Northrop Division department heads the burden rate schedule required for fiscal year 1957-58. "Our immediate goal is a competitive position equal to any in the industry," he stated. "Achievement of a burden rate that will make our bidding position second to none calls for the complete support of all Department managers and their supervisory teams. The utmost in managerial skill is required ... August 1 is new burden rate deadline.



**DANCING UP A STORM** at the Engineering May-pole Dance are Jim Clancy, Data Requirements, and his pert partner, Judy Sell. They were but two of the 500 Norcrafters and friends who rocked and rhumbad last week at the Westport Beach Club in Playa Del Rey. Happy group.



**THE BAND STOPPED PLAYING** but the music lingered on as Norcrafters provided their own intermission entertainment. Irene McCarthy, Reproduction, played a cool piano while Bessie Campbell, left, and Barbara Cooke, both of Fluid Dynamics, chanted along. Looking on are Dale Manchester, Project Planning, and Buck Nichols, Data Requirements, with his wife Pat. The affair was voted top success.

## New Names In Company Nomenclature

Use of the term "Department number" will be discontinued, it was announced in a directive issued by Whitley C. Collins, president of Northrop Aircraft, Inc. In the future these numbers will be identified as organization numbers, or when appropriate, as badge numbers.

The change in terminology is being made to reflect the new standard pattern of titles for management levels and personnel positions at such levels.

To simplify communications, facilitate the delegation of authority, and clarify the relationships between organizational segments, the following nomenclature will now be applied to the Corporation and its several divisions:

The headquarters of the Company, consisting of the president and those who assist him in the over-all administration of Company affairs, will be termed Offices.

Under the Office of the President and reporting directly to him will be the Divisions: Northrop, Radioplane, Nortronics and Northrop International.

The term "Department" will now apply to the functional or product segment of a Division, as Engineering Department, Manufacturing Department, or Systems Support Department. The heads of Departments will be known as managers.

Departments will be divided into sections, sections into groups, groups into branches, branches into units, and units, if necessary, into subunits.

Personnel titles have not been established for positions below the Department level, but the following titles will always be used in the following order of importance: In Administration and Engineering, supervisor reports to unit supervisor, unit supervisor to general supervisor, general supervisor to chief, and chief to director. In Production and Maintenance, foreman reports to general foreman, general foreman to superintendent, superintendent to general superintendent, and general superintendent to director.

The term "facility" applies to geographical location rather than to organizational level.

## Referrals

(Continued from Page 1)

at the time he applies present his referral card signed by the Norcrafter who referred him, and that he must not already be employed by Northrop Aircraft, Inc.

Referral cards may be obtained from the receptionist in the Engineering Scientific Personnel office or by calling station 1893.

Bonus payments will be made to the referring Norcrafter after the applicant has held his position for 90 days.

The bonus is designed as an added incentive to referral activity in line with Northrop's policy of encouraging Norcrafters to refer to the employment offices persons qualified for existing job openings.

Personnel in any section of Industrial Relations are not eligible for participation in the award program.



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 2)

LOS ANGELES ST. & MERCED, Baldwin Park. (Desire ride to El Monte, San Gabriel or Monrovia.) C. E. BERTHIEL (5110-55947, ext. 1420). ED 7-9112. 2-2

(Zone 3)

BUDLONG & 91st ST., Los Angeles. ERNEST ROMERO (5501-17783, ext. 2200). PL 5-7331. 2-3

SAN BERNARDINO FRWY & TOWNE, Pomona. (Desire car pool.) E. O. HILTON (5568-22511, ext. 2745). LY 4-2520. 2-3

(Zone 5)

ATLANTIC & MARKET, Long Beach. (Consider car pool.) GLENN ANDERSON (5564-49775, ext. 2565). GA 2-7221. 2-5

LA PALMA & MILLER, Buena Park. (Desire car pool.) R. C. HAMILTON (5406-42196, ext. 2220). JA 7-5154. 2-5

(Zone 13)

WASHINGTON & SEPULVEDA, Culver City. HAROLD L. BENNETT (5338-16561, ext. 2138). VE 7-4237. 2-13

(Zone 14)

LAUREL CANYON & MAGNOLIA, North Hollywood. (Have decal.) MONTE TOOLE (5232-53682, ext. 2171). PO 1-9269. 2-14

7:30 a.m. — 4:15 p.m.

(Zone 3)

BARRANCA & SAN BERNARDINO FRWY, Covina. (Consider car pool.) R. J. HALLOWELL (8920-55894, ext. 1564). ED 2-4409. 3-3

(Zone 5)

ORANGE & STANTON, Anaheim. (Established car pool.) WALTER A. DAY (8920-27542, ext. 1564). JA 7-4270. 3-5

LA PALMA & MILLER, Buena Park. (Established car pool.) B. E. LOVERIN (8920-32252, ext. 667). JA 7-4378. 3-5

SOUTH & WOODRUFF, Lakewood. (Consider car pool.) LOU WILHELM (8930-33435, ext. 2773). TO 6-5131. 3-5

(Zone 13)

RESEDA BLVD. & ROSCOE, Reseda. (Desire car pool.) ROY L. SCOTT (5120-55967, ext. 715). DI 3-8848. 3-13

(Zone 14)

ARBOR VITAE & PRAIRIE, Inglewood. D. M. STADELWISER (8910-54858, ext. 1720). 3-14

8:00 a.m. — 4:45 p.m.

(Zone 1)

CRENSHAW & 104th ST., Inglewood. DOLORES P. QUESNEL (3275-45002, ext. 459). OR 4-8164. 5-1

(Zone 4)

IMPERIAL & ATLANTIC, Lynwood. (Desire car pool.) ROBERT J. LANDERS (1400-54984, ext. 2641). LO 6-5773. 5-4

(Zone 5)

DEL AMO & PARAMOUNT, Long Beach. (Established car pool.) R. C. BIRDWELL (3247-40734, ext. 2563). GA 2-1837. 5-5

GARDEN GROVE BLVD. & MAGNOLIA, Garden Grove. (Established car pool.) BILLY WEBER (2811-12728, ext. 581). JE 7-1874. 5-5

(Zone 9)

PACIFIC COAST HWY & AVE D, Redondo Beach. (Desire car pool.) T. K. TOWW (3130-33250, ext. 1555). FR 5-1377. 5-9

(Zone 10)

AVIATION & MANHATTAN BEACH BLVD., Redondo Beach. SHARON ANDREWS (2410-49335, ext. 1752). FR 6-2502. 5-10

HERMOSA AVE. & 17th ST., Hermosa Beach. ROSEMARY PENNY (3120-48588, ext. 2535). FR 2-0625. 5-10

(Zone 13)

SEPULVEDA & JEFFERSON, Culver City. SY PICKER (3130-25074, ext. 1555). EX 8-0330. 5-13

(Zone 14)

HOLLYWOOD BLVD. & LA BREA, Hollywood. JOHN D'ERRICO (3142-47590, ext. 2022). 5-14

3:45 p.m. — 12:15 a.m.

(Zone 10)

ROSECRANS & AVIATION, Hawthorne. MARGIE KEUNE (5223-15307, ext. 563). OS 6-7993. 7-10

### Miscellaneous — Split Shift

(Zone 5)

LAKEWOOD & CENTER, Bellflower. (Hours: 4:15 p.m.—12:45 a.m.) R. D. KINKADE (2720-35367, ext. 2408). 10-5

(Zone 6)

NORMANDIE & 161st ST., Gardena. (Hours: 7:15 a.m.—3:45 p.m.) ANN MORREL (5355-52632, ext. 2083). DA 9-3563. 10-6

(Zone 13)

LA BREA & CENTINELA, Inglewood. (Hours: 5 p.m.—1:30 a.m.) A. VASQUEZ (9513-52221, ext. 2264). OR 7-3327. 10-13

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 3)

SAN BERNARDINO FRWY & TOWNE, Pomona. (Desire car pool.) E. O. HILTON (5568-22511, ext. 2745). LY 4-2520. 12-3

(Zone 4)

PARAMOUNT & WASHINGTON, Rivera. (Via Paramount, Slauson, Fairfield, Florence, Van Ness.) JOHN H. HAGERMAN (5515-20505, ext. 1233). OX 2-5860. 12-4

(Zone 5)

CHAPMAN & HWY 39, Anaheim. (Via Lincoln, South or Artesia.) T. M. ELROD (5501-17641, ext. 2200). LE 9-2895. 12-5

ATLANTIC & MARKET, Long Beach. (Consider car pool.) GLENN ANDERSON (5564-49775, ext. 2565). GA 2-7221. 12-5

LA PALMA & MILLER, Buena Park. (Desire car pool.) R. C. HAMILTON (5406-42196, ext. 2220). JA 7-5154. 12-5

PIONEER & ROSECRANS, Norwalk. (Via El Segundo Blvd., Rosecrans or Compton Blvd.) MELVIN C. ROCKHILL (5355-54461, ext. 1445). UN 3-2470. 12-5

(Zone 14)

LAUREL CANYON & MAGNOLIA, North Hollywood. (Have decal.) MONTE TOOLE (5232-53682, ext. 2171). PO 1-9269. 12-14

7:30 a.m. — 4:15 p.m.

(Zone 1)

MANCHESTER & CRENSHAW, Inglewood. CHARLOTTE WOOLUMS (9420-27690, ext. 2151). PL 3-7484. 13-1

MELROSE & VERMONT, Los Angeles. (Via Crenshaw.) EMANUEL S. ALFIERIS (5120-51560, ext. 701). NO 2-9701. 13-1

(Zone 3)

BARRANCA & SAN BERNARDINO FRWY, Covina. (Consider car pool.) R. J. HALLOWELL (8920-55894, ext. 1564). ED 2-4409. 13-3

(Zone 5)

ORANGE & STANTON, Anaheim. (Established car pool.) WALTER A. DAY (8920-27542, ext. 1564). JA 7-4270. 13-5

LA PALMA & MILLER, Buena Park. (Established car pool.) B. E. LOVERIN (8920-32252, ext. 667). JA 7-4378. 13-5

SOUTH & WOODRUFF, Lakewood. (Consider car pool.) LOU WILHELM (8930-33435, ext. 2773). TO 6-5131. 13-5

(Zone 10)

PIER & REDONDO BEACH BLVD., Hermosa Beach. C. F. MONIZ (5143-43550, ext. 663). FR 6-0734. 13-10

(Zone 13)

RESEDA BLVD. & ROSCOE, Reseda. (Desire car pool.) ROY L. SCOTT (5120-55967, ext. 715). DI 3-8848. 13-13

8:00 a.m. — 4:45 p.m.

(Zone 4)

IMPERIAL & ATLANTIC, Lynwood. (Desire car pool.) ROBERT J. LANDERS (1400-54984, ext. 2641). LO 6-5773. 15-4

(Zone 5)

DEL AMO & PARAMOUNT, Long Beach. (Established car pool.) R. C. BIRDWELL (3247-40734, ext. 2563). GA 2-1837. 5-5

GARDEN GROVE BLVD. & MAGNOLIA, Garden Grove. (Established car pool.) BILLY WEBER (2811-12728, ext. 581). JE 7-1874. 15-5

(Zone 9)

PACIFIC COAST HWY & AVE D, Redondo Beach. (Desire car pool.) T. K. TOWW (3130-33250, ext. 1555). FR 5-1377. 15-9

(Zone 12)

SEPULVEDA & MANCHESTER, Westchester. CLYDE B. SHELLEY (3140-45979, ext. 745). OR 4-2267. 15-12

3:45 p.m. — 12:15 a.m.

(Zone 5)

ROSECRANS & WILMINGTON BLVD., Compton. THOMAS M. GREGORY (5223-15297, ext. 563). NE 1-3058. 17-5

(Zone 9)

PRAIRIE & 174th ST., Torrance. A. CERNY (7020-28185, ext. 788). FR 2-1497. 17-9

4:45 p.m. — 1:15 a.m.

(Zone 3)

AZUSA AVE. & SAN BERNARDINO FRWY, Azusa. JOHN C. HEMPSMYER (5223-15261, ext. 563). ED 4-6598. 18-3

### Miscellaneous — Split Shift

(Zone 12)

SEPULVEDA & MANCHESTER, Westchester. (Hours: 6:45 a.m.—3:30 p.m.) S. SAX (2630-25437, ext. 3-215). OR 2-1580.

**SHARE THE RIDE**



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

FLUTE, Gretsch C, new pads. FR 9-9616.  
VOLKSWAGEN, 1957 sedan, undercoated, chrome disks, twin visors, carpeted, \$1650. LU 2-6790. A  
FORD, 1953 V8 2-dr, \$400. OS 6-7228.  
PONTIAC, 1950 Catalina, Hydramatic, new tires w/1 1/2-yr guarantee, leather upholstery. PL 4-2595. A  
HOUSE, 3-bdrm, den, 2 baths, Hollypark, terms, \$22,250. FR 8-5117. A  
PLYMOUTH, 1951 Concord 2-dr slant-back, new paint & seat covers, leatherette interior. FR 9-9616. A  
CHEVROLET, 1957 convertible, take over \$1700 equity & GMAC payments. JE 7-6511. A  
CAR PARTS, supercharger, Judson kit, Volkswagen or Renault; compound pressure gauges, w/installation fittings, \$75. EA 2-0301. A  
CAR PARTS, Model T front axle & wheels, 4.40-4.50x21, new tires & tubes. OR 2-1064. A  
BEDROOM SET, \$40. DA 9-3887. A  
DINING ROOM SET, Monterey-type, table, 6 chairs, buffet, \$25. PL 4-7334. A  
WIRE WHEELS, 5, 1953-58 Cadillac. DA 3-5746. A  
MERCURY, 1950 4-dr, overdrive, recent tuneup, \$225. PL 6-1898. A  
VACUUM CLEANER, Hoover upright, \$20. OS 5-2195. A  
HOUSEHOLD FURNISHINGS. OS 6-4851. A  
ENGINE, 1948 Mercury full-race, \$100. FR 9-1333. A  
BABY FURNITURE, rocking chairs, 2, \$12 ea; chairs, 4, \$2 ea; bath tub, \$4; car seats, 2, \$3 ea; crib, mattress, \$18. OS 5-9740. A  
AUSTIN, 1951 4-dr, sun roof, new paint, \$140. HO 4-1066. A  
APPLIANCES, washer, Westinghouse automatic, \$30; range, gas, \$10. AX 3-0578. A  
GUNS, shotgun, Remington automatic 12-gauge, \$75; revolver, H&R 9-shot .22, w/500 rounds of ammunition, \$35. FR 9-8662. A  
RANGE, Rheem Wedgwood 36", chrome top, center grill, clock, timer, fluorescent lite, \$100. OR 4-0987. A  
PHOTO EQUIPMENT, camera, Zeiss-Ikon Contax 2A, Sonnar f:1.2, \$125; telephoto lens, Nikkor f:1.3.5, 13.5-cm, \$50; universal viewfinder, \$25; synchro flash, Zeiss Ikon, 6" reflector, \$15. OR 8-8306. A  
CHEVROLET, 1953 station wagon, overhauled engine, new tubeless tires, carburetor, fuel pump & brakes, \$595. FA 8-1944. A  
HOUSE, 3-bdrm, 1 1/2 baths, north Torrance, beam ceilings, fireplace, w/w carpeting, drapes, fenced yard, sprinklers, softener, appliances, GI resale, 13,000 at 4 1/2%, \$19,900. DA 9-6404. A  
HOUSE TRAILER, 1957 Mayflower 35', garbage disposal, bath & shower, awning, extras, equity \$1000. OS 9-2374. A  
DESK, executive-type, \$20. FR 8-1609. A  
RANGE, Florence 42", 4-burner, 2 storage drawers, \$35. OL 6-0753. A  
HOUSE, 3-bdrm, 1 1/2 baths, w/w carpeting, drapes, breezeway, 2-car garage, corner lot, block wall, near Northrop & schools, \$19,950. OS 5-4827. A  
RANGE, Electromaster electric, 4-element, automatic oven, deep well, warming oven, 2 storage drawers, \$50. DA 3-7226. A  
DISHES, antique, GR 7-1539. A  
WASHER, Hotpoint automatic, \$50. FR 8-8550. A  
PISTOL, H&R target-type 9-shot, iron sights, 4" barrel, holster, \$25. FR 9-3128. A  
PICKUP, 1950 Ford 1/2-ton, \$425. ME 0-1696. A  
CHILDREN'S CLOTHING, girl's, sizes 4-6, teddy bear coat, dresses, skirts; boy's, sizes 6-18 mo, suits, others. FR 9-9616. A  
BOAT, 12' Fiberglass, Glen L design, controls, trailer, Mercury Mark 20 engine. OR 7-3275. A  
TRAILER, teardrop-type, sleeps 3, alum. exterior, stove, ice box, 20-gal water tank w/hand pump, \$250. OR 2-8956. A  
WASHER, Westinghouse L5 automatic, \$49. DA 3-0270. A  
PUPPIES, German shepherd, \$8 ea. RE 7-2651. A  
ELECTRIC TRAIN, American Flyer, \$25. HA 9-5344. A  
BOAT, Burchcraft 14', glassed, controls, 25-hp Evinrude, trailer, skis, 4 life preservers. \$650. YE 8-7588. A  
SOFA BED, w/matching chair, modern, green & metallic gold, foam cushions, \$50. FR 9-2774. A  
FURNITURE, club chair & ottoman, \$50; coffee table, round lamp table, \$25. AX 4-9294. A  
FURNITURE, bedroom set, twin-size, 5-pc aery, \$75; desk, mahogany, \$20; studio couch, \$15. FR 9-5088. A

## FOR SALE

TRAILER, teardrop camping-type, sleeps 3, \$175. OS 6-0867. A  
TV SET, Packard-Bell 12 1/2" console, maple, \$25. FR 5-7494. A  
PICKUP, 1953 Dodge 1/2-ton, new tires, heavy-duty springs, \$450. FR 9-2966. A  
PONTIAC, 1953 2-dr sedan, \$425. TE 2-5370. A  
BASS FIDDLE, German-made 3/4-size, bow, cover, stand, \$175. PL 3-1937. A  
FORD, 1940 2-dr. OR 1-7066. A  
WIRE RECORDER, RCA, 1/2-hr play, \$25. DA 3-4932. A  
CAR ACCESSORIES, radio, 1956 Ford long-range, \$55; radio, 1953 Buick, \$20; hubcaps, 4, 1956 Ford 15" full-rim, \$10; spotlight, 6V plug-in, \$5; heater-defroster, 1955 Ford pickup, \$30; bumper jack, \$5. DA 3-7383 after 11 a.m. A  
STUDEBAKER, 1950 Commander 2-dr, new brakes, \$125. OR 1-8004. A  
MOTORCYCLE, 1956 Tiger Cub 200-cc, \$325. ME 3-3500. A  
GHIA-VOLKSWAGEN, 1957, \$2600. OS 6-6108. A  
HOUSE, 3-bdrm, furnished or unfurnished, 1250 sq ft, hardwood floors, 2-car garage, redwood enclosed patio w/brick bqa, near buses & schools. DA 4-1876. A  
BICYCLES, 2, girls' 26", \$12 ea. OS 5-0792. A  
LOT, 70'x300', paved street, utilities, terms, \$2500. CA 2-3065. A  
ELECTRIC GUITAR, Hawaiian, amplifier. DA 9-7421. A  
FORMAL, woman's size 9-10, for party or wedding, pink. OR 2-6385. A  
PIANO, upright, cherry wood, tuned. OR 1-7701. A  
HOUSE, 3-bdrm, stucco, Torrance area, fenced, landscaped, near schools & markets, terms, \$12,500. Box 1711. A  
SCREEN DOOR, wrought iron trim, \$8. PL 7-2619. A  
CAR ACCESSORIES, TR-3, top & side curtains, tonneau cover, boot, tire, Dunlop 5.50x15, w/tube & wheel. Box 1707. A  
DE SOTO, 1948 Deluxe 4-dr, tip-toe shift, \$200. PL 1-2784. A  
WATER METER, 2" compound, \$100. DA 4-4750. A  
MOTORCYCLE, 1955 Triumph Tiger Cub, \$295. AX 2-0041. A  
HOUSE, 3-bdrm, 1 1/2 baths, hardwood floors, 2-car garage, stall shower, forced air heating, acoustic ceilings, flagstone patio, near schools & shopping center, \$17,500. FR 8-2648. A  
HYDROPLANE, Class M stock, steering & safety throttle, \$125. PL 4-7861. A  
BICYCLE, Schwinn 26", risers, heavy-duty frame, spring front, \$25. PL 4-0778. A  
MERCEDES-BENZ, 1956 190SL convertible, silver gray, red leather. ST 6-1685. A  
TELESCOPE MIRROR, 8" aluminized, Pyrex, \$60. FR 5-8926. A  
MOTORCYCLE, 1956 AJS twin 500-cc, street equipment, all chrome, \$450. OS 6-6108. A  
MUSIC CENTER, Stromberg-Carlson, mahogany, FM radio, 12 1/2" TV, \$35. OR 1-0574. A  
PLYMOUTH, 1947 4-dr, Southwind heater, new engine, trans. & paint. FR 9-6713. A  
BUICK, 1953 Riviera, extras, equity \$50. TO 6-5438. A  
HOUSE, 2-bdrm, Gardena, 2-car garage, 4% loan, \$56 mo payments, furnished or unfurnished, \$13,500. OS 5-9431. A  
SILVERWARE, over 100-pc, plated, C monogram, \$125. PL 5-2436. A  
TV SET, Philco 16", spare tubes, \$35. EX 8-4032. A  
ROTISSERIE, G.E. 3-way, 1-yr guarantee, cost \$71. \$55. FA 1-3274. A  
WRIST WATCH, Benrus lady's. OS 5-1423. A  
HOUSE TRAILER, 1958 40', 2-bdrm, awning, side drapes, LA 5-8874. A  
PUPPY, boxer, 6-mo old, AKC, shots, \$50. NE 2-3512. A  
PACKARD, 1950, Ultramatic, new fuel pump & battery. \$250. HE 2-2083. A  
SKI BOAT, Merline 14', 1958 Mercury Mark 75 engine, trailer. DA 9-1677. A  
DOG, Samoyede, 8-mo old white female, pedigreed, \$45. PL 5-3777. A  
MOTOR SCOOTER, 1947 Powell, overhauled engine. \$30. OR 1-4134. A  
OLDSMOBILE, 1958 Super 88 Holiday coupe, 2-tone, extras, cost \$5000, \$3395. FR 8-4961. A  
DRAFTING MACHINE, Bruning, \$65. Box 1709. A  
MG, 1952 Mark II, overhauled, \$900. OR 1-1454. A  
FURNITURE, 7-pc set, rattan, \$185. OS 6-8842. A  
OUTBOARD ENGINES, 2, 7.5-hp, 30-hp. OS 6-0045. A  
FORD, 1950 4-dr, overdrive, new brakes, \$150. DA 3-2547. A

## FOR SALE

MOTORCYCLE, 1956 Harley-Davidson 74-FL, float shift, extras, black leather size 38 motorcycle jacket, \$985. DA 9-9311. A  
ENGINE, 1949 Ford V8, w/trans. & accessories, \$65. FR 5-7701. A  
PANEL TRUCK, 1951 Dodge, \$250. DA 4-3845. A  
BOAT, Merline 12', mahogany, glassed, steering & hardware; factory boat trailer; Mercury Mark 25 engine w/controls; sell separately or \$650. FR 4-0976. A  
RANGE, 1955 Gaffers & Sattler 32", 4-burner, center grill, timer, storage drawer, \$75. TE 1-3801. A  
ENCYCLOPEDIA, Britannica, 24-vol set, year books, case, \$175. Box 1710. A  
FURNITURE, divan, double-size box springs & mattress. FR 9-5617. A  
TRAILER, 1953 Cardinal 14', alum., \$550. OS 5-2051. A  
PLYMOUTH, 1955 Belvedere 4-dr, Powerflite, Solex power brakes, rear speaker, elect. windows & seats, take older car, preferably station wagon, as part, terms, \$1195. AX 3-6095. A  
CAMERA, Aragus 35-mm, wide-angle & telephoto lenses, flash attachment, filters, \$40. OR 4-7422. A  
BEDS, 2 twin-size, box springs, mattresses, metal frames w/casters, \$35 ea. OS 9-2752. A  
ELECTRONIC EQUIPMENT, signal gen., Precision ES-200C; sweep gen., Heathkit TS-3; scope, Heathkit O-6; isolation transformer, RCA; TV & radio circuit books; supplies for repair business. TH 6-5589. A  
BABY FURNITURE, crib w/mattress, hi chair, chest, others, \$50. EM 6-8649. A  
HOUSE, 2-bdrm, den, fenced yard, near new schools, churches & stores, \$795 down, \$9000. TE 5-5198. A  
FURNITURE, bedroom set, bed w/inner-spring mattress, 3 chests, 2 nightstands, \$50; dining table, blonde, 4 chairs, \$35; sofa, 7', pink Naugahyde, \$50; record stand, wrought iron, \$5. OR 1-6661. A  
LOT, Big Bear Lake, Moonridge tract 78'x130', level, trees, all-year road. OR 8-5307. A  
BOAT TRAILERS, 1700-lb 16' boat capacity, 8' wide, 6.50x15 tires, roller support. FR 5-3894. A  
RANGE, Estate Heatrola, 4-burner, grill, \$35. GE 1-4233. A  
TELESCOPE, 42-mm refractor, erector assembly, tripod, Barlow lens, \$25. PL 4-8957. A  
ICE SKATES, Johnson figure-type, woman's size 7, white, \$7.50. FR 4-5852. A  
TRAILER, collapsible camping- or utility-type, factory-made, sleeps 4, steel body, canvas top, \$125. PL 5-8643. A  
FORD, 1953 Zephyr 6-cyl 4-dr, \$375. OR 2-1104. A  
STOVE, Wedgwood, gas, \$12.50. OR 1-5046. A  
VOLKSWAGEN, 1956, sun roof, \$1395. OS 5-4262. A  
EASEL, artist's studio-type, cost \$36, \$10. PL 6-1129. A  
TRAILER, Price Coach, sleeps 2, ice box, sink, stove, 10' canvas windbreaker, \$300. DA 3-2935. A  
ORGAN, Hammond electric, Leslie speaker, OS 6-3902. A  
DRAPES, 3 pr, brown, traverse-type w/rods. FR 6-6829. A  
YOUTH BED, \$20. DA 9-5016. A  
PICKUP, 1958 Chevrolet 1/2-ton, deluxe cab, equity. Box 1703. A  
FORD, 1953 Crestline Victoria, column shift, overdrive, 5 new tires, leather interior, overhauled engine. LO 7-0012. A  
MERCURY, 1955 Monterey 4-dr, black, rear speaker, leather interior, dual pipes, new generator, voltage regulator, battery, tires & mufflers. LO 7-4146. A  
BOAT, 14' plywood, glassed, 65" beam. FR 2-9097. A  
TV SET, Silvertone 17" console, mahogany. DA 4-7782. A  
FORD, 1954 Custom V8 4-dr, Fordomatic, \$750. OS 5-0933. A  
STUDEBAKER, 1951 convertible, Hydramatic, OS 6-1328. A  
APPLIANCES, range, Western Holly, gas, \$40; refrigerator, Servel, new element, \$40; both, \$70. HA 5-1030. A  
FURNITURE, table, chairs, buffet, walnut, \$35; desk chair, walnut, \$3; mattress box springs, \$20; bed ends, \$5; 2 upholstered chairs, \$12.50 ea; end table w/lamp, \$4; statue lamp, \$20; Chinese side lamps, pr, \$7.50. FA 8-0935. A  
WASHER, ABC wringer-type, \$35. OS 6-6006. A  
HOUSEHOLD FURNISHINGS. OS 6-6478. A  
MOTORCYCLE, 1954 Francis Barnett 200-cc, \$125. OR 1-1660. A  
BABY FURNITURE, bathinet, bassinet, car seat, \$20. EX 8-5228. A  
BAR, L-shaped, padded front, formica top, sink, storage space, w/3 stools, \$225. OR 4-8654. A  
FIAT, 1958 600 2-dr, sun roof, 45 mpg, \$1350. HA 5-1846. A  
FORD, 1930 Model A coupe, metal roof, \$98. DA 3-3163. A  
ACCORDIAN, 120 bass, adult-size, cost \$350, \$200. OR 1-2828 days. A  
STENO TYPE, case, \$45. HA 1-3361. A  
STROLLER, twin-size, awning, basket, \$20. OS 6-5275. A  
LOT, Hesperia, 1.5 acres, corner, \$3000. OS 9-3188. A  
APPLIANCES, refrigerator, 11 cu ft, \$65; range, 2 mo old, ariddle & timer, \$85. OS 6-8890. A  
DODGE, 1949 4-dr, \$95. OS 5-0279. A

# Boeing Line Norcrafters See Products in Action

Norcrafters on the Boeing sub-contract assembly lines had an opportunity recently to see their efforts tie in with the total production of the KC-135 airplane.

A 16-mm sound and color film, "The Jet Stratotanker—An Introduction to the KC-135 Airplane", was shown to personnel of both shifts during their normal lunch periods.

One scene, filmed on the Hawthorne wing line, pictures two Norcrafters working on a wing panel of the giant stratotanker. H. E. Woltz and G. E. Rollins, Boeing Wing, make final adjustments to the panel before it is shipped to the Boeing plant for assembly.

Northrop manufactures the aft fuselage section and the outboard section of the outer wing. The film showed how these components fit into the final product.

Bob Catlin, director, Quality Control, and Assistant Director Jack Young were instrumental in obtaining the film for a Northrop showing, with the cooperation of

two men from Boeing Airplane Company: Earl Pokela, Quality Control manager of the Transport Division in Renton, Washington; and Thomas Reidinger from Boeing's News Bureau in Seattle, Washington.

# Robert Pratt, Nortronics, Jaycee Veep

Nortronicsman Robert W. Pratt was installed as California Junior Chamber of Commerce state vice-president at the recent Jaycee convention in Santa Cruz.

Pratt, research assistant, Mark I Guidance and Development, will serve as administrative officer for 13 Junior Chamber locals in southwestern Los Angeles County.

A Jaycee member for three years, Pratt has held the post of state director for the Inglewood Junior Chamber for the past year.

## FOR SALE

RANGE, Florence 42", gas, 4-burner, 2 storage drawers, \$35. OL 6-0753. A  
MUSICAL INSTRUMENTS, clarinet, \$60; violin, 3/4-size, \$25. HA 5-1768. A  
MOTOR SCOOTER, 1952 Allstate 4-hp, \$75. OS 5-6867 days. A  
RANGE, O'Keefe & Merritt, \$50. CL 7-3140. A  
AMMUNITION, many calibers. OS 5-2617. A  
FURNITURE, bed davenport, 88", w/chair, \$60; rug, blue wool, 9x12, \$60. PL 4-1964. A

## WANTED TO BUY

TIRES, 6.50x16. PL 5-0863. B  
ICE CREAM FREEZER, Box 1702. B  
CEMENT MIXER, PL 2-7995. B  
SEWING MACHINE, upholstery heavy-duty treadle-type. OS 6-6478. B  
DIVAN, Riviera or similar. OS 9-3188. B  
FENCE, 50' chain link, posts, preferably 5' high w/gate. PL 4-1964. B  
OLD COINS. DA 4-5532. B  
TEXTBOOK, General Chemistry, Dr. Linus Pauling, 2nd edition. FR 9-9616. B  
TRUCK, 1 1/2-ton. DA 3-6658. B  
GOLF CLUBS, woman's. OS 6-3326. B

## FREE (to be given away)

KITTENS, half Persian. FR 6-1670. D  
KITTEN, long-hair, black male, Box 1705. D  
DOG, cocker-spits, 1-yr old male, likes children, good watchdog, shots, license. HA 5-1030. D  
KITTENS, 8, assorted colors, males & females. DA 4-7323. D

## RENTALS OFFERED

APARTMENT, 1-bdrm, unfurnished, garbage disposal, garage, older child OK, near Northrop, \$75 mo. OS 5-8335. E  
HOUSE, 2-bdrm, den, 2 baths, furnished, Playa del Rey, view, 2 fireplaces, wet bar, enclosed patio, \$300 mo. EX 8-5228. E  
APARTMENTS, 1- & 2-bdrm, unfurnished, near school & Northrop, children OK, \$77.50 & \$95 mo. OR 7-4021. E  
SHARE APARTMENT, desire woman to share w/same. PL 7-2619. E  
SHARE HOUSE, desire 1 or 2 working women to share w/same. FR 9-2966. E  
APARTMENT, 4-rm, unfurnished, \$65 mo. PL 6-6177. E  
APARTMENT, 2-bdrm, Gardena, disposal, children OK, \$75 mo. PL 4-8281. E  
ROOM, furnished, kitchen privileges, \$12 wk. OS 6-3326. E  
APARTMENTS, 1 bdrm, disposal, carport, TV jacks; unfurnished, \$70; furnished, \$85. OS 6-8782. E  
HOUSE, 1-bdrm, adults, no pets, \$65 mo. OS 5-3423. E  
APARTMENT, over garage, near Century & Normandie, electric stove & refrigerator, \$60 mo. TO 2-6017. E  
ROOM, private entrance & bath, near Northrop. OS 6-6696. A  
ROOM, furnished, man, near Northrop, \$8 wk. OS 6-9567. E  
HOUSE, 1-bdrm, furnished, near Northrop, adults, utilities paid, \$70 mo. OS 5-3537. A  
APARTMENT, bachelor, 1/2-block from ocean, Manhattan Beach, garage, utilities paid, \$57.50 mo. FR 4-7202. E  
APARTMENT, 2-bdrm, unfurnished, Hawthorne, private sundeck, garage. Box 1712. E

## RENTALS OFFERED

APARTMENT, 2-bdrm, unfurnished, Inglewood, \$85 mo. TE 1-2973. E  
GARAGE, near Northrop, \$10 mo. Box 1706. E  
HOUSE, 2-bdrm, unfurnished, Lawndale, fenced yard, garage, children OK, \$75 mo. Box 1708. E  
HOUSE, 3-bdrm, unfurnished, Torrance, fenced yard, children OK, water paid, \$95 mo. OS 6-6074. E  
APARTMENTS, 1-bdrm & bachelor, furnished, near Northrop. OR 1-5046. E  
APARTMENT, bachelor, furnished, kitchen, utilities paid, \$45 mo. OS 6-9351. E  
APARTMENT, 2-bdrm, near Northrop, children OK, \$90 mo. Box 1704. E  
APARTMENTS, 1-bdrm, w/w carpeting, disposal, near Northrop; furnished, \$80; unfurnished, \$65 mo. OS 6-2113. E  
APARTMENT, 1-bdrm, unfurnished, garage, near buses & park, adults, \$75 mo. OR 1-3421. E  
HOUSE, 2-bdrm, unfurnished, fenced yard, hardwood floors, near Northrop, \$100 mo. OS 5-9695. E

## RENTALS WANTED

HOUSE, 3-bdrm, unfurnished, within 2 blocks of ocean, 2-car garage. FR 9-9616. F  
HOUSE, 2 or 3-bdrm, \$60 mo. EX 8-1149. F  
HOUSE, 2- or 3-bdrm, yard, within 1 mile of Northrop, \$75-\$80 mo. GA 2-8457. E

## PERSONALS

BRIDGE PLAYERS WANTED, 2 more novices & 1 qualified instructor for contract bridge lessons. OS 6-3326. L  
RIDERS WANTED for Minnesota trip May 28. OR 4-5086. L  
HANDYMAN WANTED to do minor household repairs, Redondo area. PL 9-6332. L

## FOR SALE OR TRADE

DODGE, 4-dr, padded dash, \$145 or trade for Britannia or spinet. FR 5-5298. E  
FORMAL, woman's size 12, lite blue, \$10 or trade for one same size, another color. FR 5-0038. M  
APPLIANCES, refrigerator, Kelvinator; freezer, Kenmore; sell or trade for comb. refrigerator-freezer. HE 2-2036. M  
RAMBLER, 1957 Custom Cross Country 4-dr station wagon, Hydramatic, \$2095 or trade equity for 1952-54 car, preferably station wagon. Box 1701. M  
TRAILER, teardrop camping-type, fully equipped, sleeps 2 adults & 1 child, \$300 or trade for small car. OS 5-0792. M  
MOTORCYCLE, 1952 Jawa, spring frame. DA 3-1078. M  
TRAILER, 1956 Rollaway 40', 2-bdrm, awning, cooler, equity. DA 9-6546 before 4 p.m. M  
ISETTA, 1957, equity \$150 or trade for outboard engine or boat. DA 9-5118. M  
FORD, club coupe, 1950 chassis w/1951 body, no engine, \$30 or trade for body grinder, welding or brazing outfit, body & fender tools, power tools. WE 1-5405. M  
TV SETS, 17"-21", parts, sell or trade for 14' boat controls. FR 6-5646. M  
HOUSE, 3-bdrm, den, Rolling Hills, 2 fireplaces, tile roof, 2300 sq ft, custom-built, near elem. school, corner lot, pine trees, \$38,950 or trade. PL 5-5719. M  
JAGUAR, 1952 XK120 roadster, hardtop, tools, seat belts, tonneau, \$1250 or trade. FR 9-3128. M



# SPORTS

*The Northrop News*



**CHURNING UP THE BASEPATH**—Pounding the sod in a futile attempt to beat the ball is Pony Leaguer Tony Contreras of the Cubs. Holding the horsehide is the Athletics first sacker, Gordon Miller. Northrop provides the large recreational facilities for the fast brand of hard-hitting baseball these 13- and 14-year-old nines play.

## Catalina Cove is Anchorage For NRC Boat Club Cruise

The annual Boat Club Memorial Day cruise takes a heading on Isthmus Cove, Catalina.

The three-day agenda, May 30 through June 1, centers at the Cove camp grounds and provides

### BATSWOMEN PRACTICE FOR LEAGUE START—CURVES ORDER OF DAY

Underhand pitching and lip-sticked catching hold forth at St. Andrews Park. St. Andrews Place and Manchester, each Tuesday at 6 p.m.

Softball with the woman's touch is being practiced by Norcrafter femmes in preparation for the season's opening of the Los Angeles City Woman's Industrial League June 6.

Women interested in exchanging the proverbial rolling pin for a bat may contact Personnel Activities. A coach, uniforms and equipment are NRC furnished.

for beachcombing, fishing, swimming and assorted events.

Highlights of the expedition are the camper's delight Friday night—a deluxe weenie roast—and the more sophisticated fare on Saturday—a steak barbeque. Both evenings diners will warm up around campfires with songs and such.

Boats will cross the channel to Catalina on either the fleet or buddy system of two or more boats. Fleet captains should be contacted for information about the crossing and for cruise tickets at \$2.50 per adult and \$1.25 per child under 10.

The tickets include the chow on Friday and Saturday evenings but barbequers are asked to provide their own silver for steak manipulations.

For information on cabin accommodations, call Personnel Activities, extension 2784.

## Anglers Reel in Awards



### FAMED ORGANIST TONIGHT'S GUEST OF ORGAN CLUB

Devotees of the stentorian tones of the pipe organ will be interested in tonight's program planned by Torrance's Organ Club.

Harry Jenkins, the noted organist whose talents have spanned the eras of the silent screen and today's TV, will be guest artist for the meeting at the Inglewood Elks Club tonight at 8.

All Norcrafters are invited. For information, call Barbara Boots, Torrance extension 50.

## Scout-O-Rama Exhibits Scout Crafts, Projects

The Coliseum, land of the Dodgers, will be encampment site of this Saturday's Scout-O-Rama, 1 to 10 p.m.

Approximately 400 booths will display Scout activities and accomplishments, ranging from aluminum-foil craft to weather.

The Centinela Valley District will be well represented by 63 booths. Northrop has provided banners for area identification and four display directories covering the individual exhibits.

The Explorer unit sponsored by the NRC Boat Club, whose commissioner is Fred Wheeler, is navigating smoothly towards a display delineating traffic at sea.

NRC Boy Scouts Club, Stan Morris, commissioner, is assisting their Scout troop in a booth depicting use of the wind tunnel in aircraft development.

Industriously pounding thumbs in the construction of carpentry and cabinetmaking displays are two units supervised by Norcrafter Bill Hall.

Archery is the theme of the booth aimed at by the Scouts directed by Jack Duer, Archery Club commissioner.

Climaxing the afternoon's viewing, a 2½-hour "extravaganza" is scheduled for under the arcs. Hollywood stars and Scout talent are blended in the program.

Scout-O-Rama tickets at \$1 each may be obtained at the Coliseum or from any Scout.

## Nortronics Ball On Docket for Saturday Night

Nortronics first intra-Divisional "stomp" will swing this Saturday night from 9 till 1.

The dancers will polish the NRC Clubhouse floor to the scintillating beat provided by the Hi-Five. Throughout the evening other entertainment will be furnished by "home-grown" Nortronics talent. Refreshments will be available.

Although this gala is sponsored by Nortronics, it is open to all Norcrafters. The \$1.50-per-person tickets may be procured at Personnel Activities.

### ASTRONOMY CLUB IN ORBIT—FOCUS EYES ON COSMOS

With sights on the stars and eyes focused on the infinite, the NRC Astronomy Club opened its doors and the heavens to all Norcrafters.

Last week's initial meeting attracted 40-odd amateur stargazers and would-be astronomers. The program featured the flicker "Man in Outer Space" at the conclusion of club organization.

Among the activities on the projected agenda are excursions to the Griffith Park Observatory.

## NRC Good Time Table for June

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days)**, Jack Duer  
Meet Wednesdays, 6:30 p.m. Archery classes now in session.

**ARCHERY (nights)**, Paul Randolph  
Meet Wednesdays, 12:15 p.m.

**ART CLUB (days)**, Forrest Ayest  
Meet in Annex Thursdays, 7 p.m. Models furnished by NRC. Sculpture class meets Wednesdays, 7:30 p.m.

**ASTRONOMY (days)**  
Meet 2nd & 4th Mondays, 7:30 p.m.

**BIBLE STUDY**, Roy Stahl  
Plant 1—Daily, 11:30-12:15, Tool Design Bldg.; 11-11:45 a.m., 5566 Conf. Rm. Plant 11—Mondays & Thursdays, 12-12:45 p.m., Conf. Rm. 2.  
Eng. Bldg.—Daily, 12-12:45 p.m., Reliability Conf. Room.  
Torrance — Tuesdays, 12:15-1 p.m., Bldg. K2 Conf. Room.

**BOAT CLUB**, Fred Wheeler  
Meet 1st Wednesdays, 7:30 p.m. Night shift meets 3rd Thursdays, 2:30 p.m. Water Ski Club Days meets 3rd Thursdays, 7:30 p.m.

**BOWLING (days)**, Lloyd Forstrom  
**BOWLING (nights)**, Charlie George  
Summer leagues now in progress.

**BOY SCOUTS**, Stan Morris  
Sea Scouts, Intermediates, Cub Scouts. All Norcrafter boys welcome.

**CAMERA CLUB (days)**, Fred Armstrong  
Meet 1st, 3rd & 5th Wednesdays, 7:30 p.m.

**CAMERA CLUB (nights)**, Gene Beck  
Meet 1st & 3rd Saturdays. Election June 7.

**CAMPING CLUB**, Fred Brant  
Meet 1st Mondays. Outing May 30 thru June 1, Quaking Aspen Camp Grounds. Election June 2.

**CHESS CLUB**, Bill Henderson  
Plant-wide playoffs in progress.

**FISHING (days and nights)**

Boat chartered for June 7—limited number. Make reservations at Personnel Activities.

**GEM & MINERAL CLUB (days)**, Raymond Cole  
Mineralogy class now in session. Meet Thursdays, 7-9 p.m.

**GEM & MINERAL CLUB (nights)**, Victor Lincoln  
Meet 1st & 3rd Wednesdays, 1 p.m.

**GOLF (days)**, Ted Deguisne

**GOLF (nights)**, Leo Baker  
Los Serranos Tournament, June 29.

**GUN CLUB (days)**, Carl Turner  
Meet 3rd Wednesdays, 7:30 p.m. Pistol shoot at Torrance, 2 p.m., June 8. Rifle shoot, Torrance, 1 p.m., June 22.

**MIXED CHORUS**, Bert Bracher  
Meet Tuesdays, 7:30 p.m. All Norcrafters welcome.

**MODEL RAILROAD**, Jack Wilson  
Meeting Tuesdays, 7-10 p.m. in Annex. Visitors welcome. Need electricians, carpenters & scenic artists to help with new layout. Election June 19.

**PHILATELIC**, Eugene Richardson  
Meet 2nd & 4th Mondays, 7 p.m. Coin collectors welcome.

**RADIO CLUB (days)**, Andy Dolak  
Meet last Thursdays in Annex, 7:30 p.m. Radio Code Class, Wednesdays, 7:30 p.m. NRC's Station is W6VPZ.

**RADIO CLUB (nights)**, Merwin McGrew  
Meet last Thursdays, 1:30 p.m.

**SKEET CLUB**, Harold Bowers  
Meet every other Saturday at Long Beach Dominguez Gun Club on Artesia Blvd., 10:30 a.m., June 7 & 21.

**SKI CLUB**, Chuck Morse  
Meet 2nd Wednesdays, 7:30 p.m.

**SKIN DIVING (days)**, Ralph Gonzales  
Meet 3rd Monday, 7:30 p.m.

**SKIN DIVING (nights)**, Lillian Kemble  
Meet 3rd Wednesday, 1 p.m.

**SOFTBALL (days)**, Ken Klier  
League play Mondays & Fridays, Sportsmen's Park; Wednesdays, Rosecrans; 6 p.m.

**SPORTS CAR CLUB**, Jack Kirkpatrick  
Meet 2nd Thursday, 7:30 p.m.

**SQUARE DANCING**, Roy Jackson  
Beginners class 2nd, 3rd, 4th & 5th Sundays, Gardena Barn, 15016 Daphne St., Gardena, 3-6 p.m. Regular Sessions 1st, 2nd & 4th Sundays, at 8 p.m.

**SURF FISHING**, John Pawlicki  
Meet 1st Tuesday of month, 7:30 p.m. Boat chartered for June 1—limited number. Make reservations at Personnel Activities.

**TOASTMASTERS 212 (days)**, John Walker  
Meet every Thursday evening, 6:30 p.m., Western Avenue Country Club.

**TOASTMASTERS (days)**, Howard Cornelius  
Meet every Monday evening 6:15 p.m., Western Avenue Country Club.

**TOASTMASTERS (nights)**, Ernie McNeil  
Western Avenue Country Club.

### FOR THE LADIES

**BOWLING (days)**, Joan Sitauer  
**BOWLING (nights)**, Mary Minnaugh  
Summer leagues now in progress.

**GIRL SCOUTS**, Dallas Vasquez  
Mariners, Intermediates, Brownies. All Norcrafter girls welcome.

**SOFTBALL**, Betty Rice  
Practice games Tuesdays, St. Andrews Park, 6 p.m.

**TOASTMISTRESS**, Vicki White  
Meet in NRC Clubhouse Board Room, 1st & 3rd Thursdays, 7 p.m.



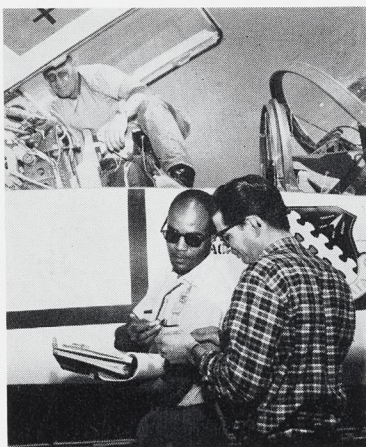
**THE SKY'S NO LIMIT**—Investigating moon craters is Dodie Stowe while, left, hubby Jim, EPA Planning Services, discusses heavens with, John Nickels, hidden by telescope; Tom Nickels; and Jot Stowe, Boeing Aft Fuselage Section





**THE BEGINNING**—Morning calm gives no hint of thundering blastoff, supersonic finish, to follow as Northrop team checks out T-38 crew escape system under simulated flight conditions. Sun silhouettes Anthony de Mello, left, and Floyd Cayer, both of Engineering Test Lab, putting final touches to sled. Scene is Edwards AFB high-speed track.

## Northrop News Pictorial



**SENSITIVE** instrumentation device is inspected by Jim Walton, instrumentation engineer, center, and Mel Saunders, Development Project Office. Floyd Cayer readies sled for supersonics.

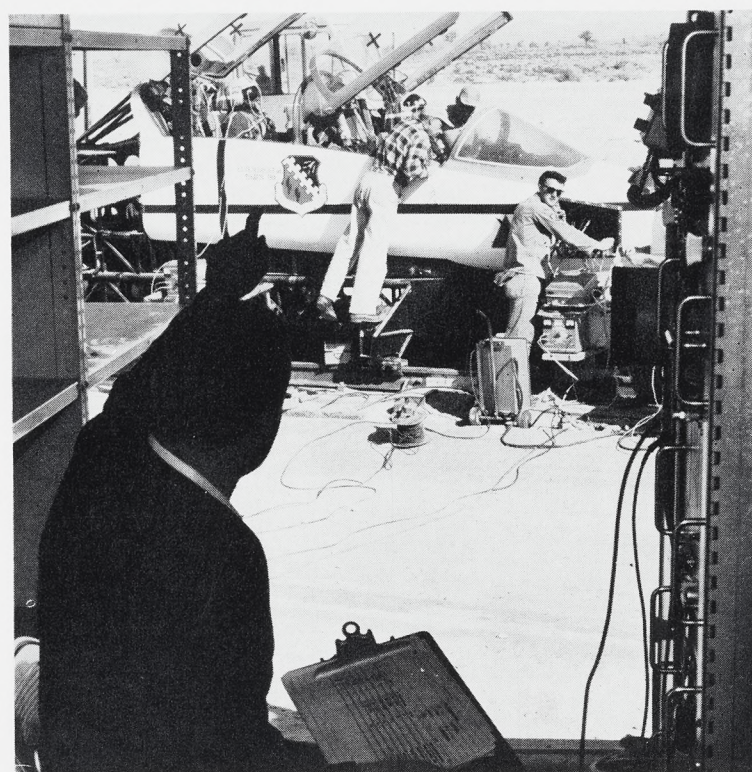


**SERVICEMEN** from Edwards Experimental Track fit sled with 11,000-pound thrust rockets. From left, Staff Sergeant James Raskell, Technical Sergeant Wallace Young, Airman 2nd Clyde Boyd put in the punch.

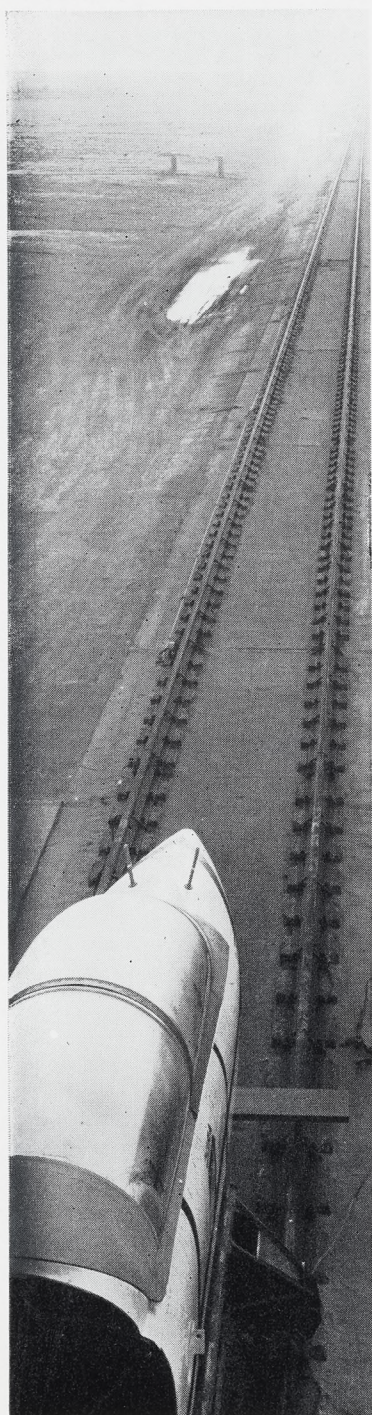


**TAPING**—Anthony de Mello secures temperature lead to helmet of rear cockpit dummy, "Sierra Sam". Dummies are fully instrumented to register every reaction during the test run high-speed seat ejection.

# T-38 TEST PICTORIAL



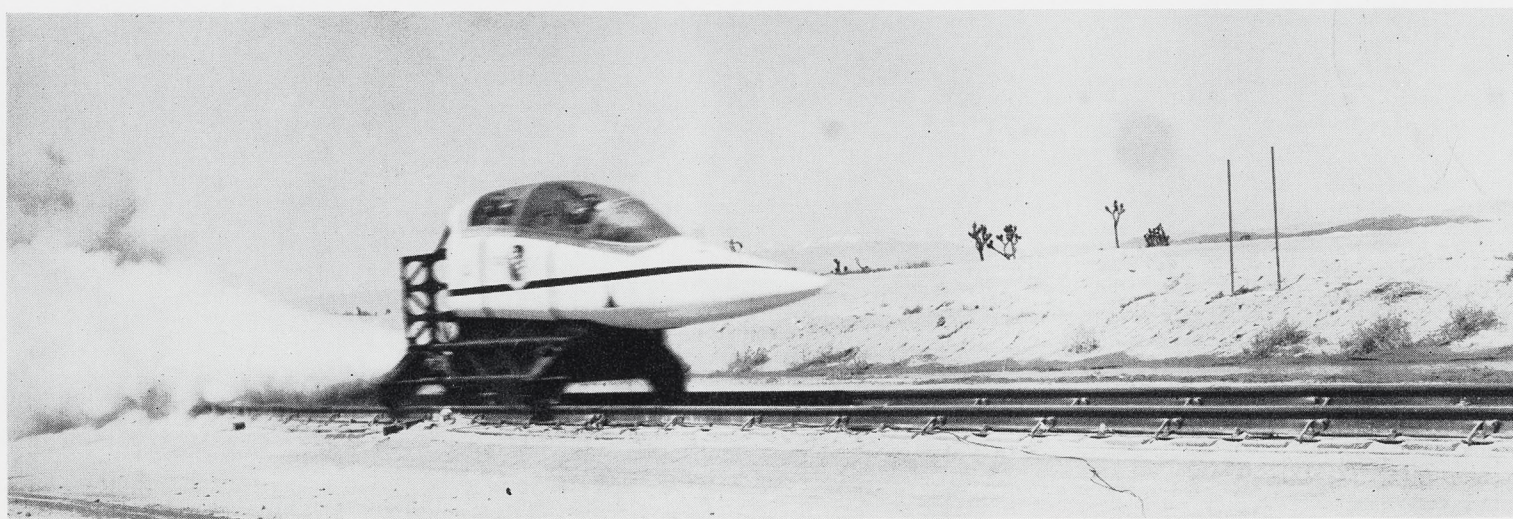
**TEAMWORK**—Jim Smith signals Sergeant Richard Strong in telemetering equipment check as sled is prepared for 45-minute countdown before firing. Ed Schafer, Engineering Test Lab, and Floyd Cayer complete camera installation in forward cockpit. Both still and movie cameras will record complete effects of ejection on "Sierra Sam".



**KEY PERSONNEL** huddle on how to get 250 pounds of man and equipment out of airplane fast enough to overcome air drag, but alive, stable, and in one piece. From left are Clyde Jensen, T-38 Project Office; John Couberly, T-38 Project Office; Jim Walton, instrumentation engineer; Nate Goode, supervisor, Airborne Equipment Design; Tyler McCoy, assistant test project engineer; Merle Fairchild, test project engineer; and Jim Smith, assistant test engineer. Pre-countdown checkout progresses. Van will move.

**TEN** thousand feet—View taken just as sun peeps over desert mountains shows one of straightest tracks in the world. Many modern air safety features were tested here. Sled rides on magnesium "slippers".

**POWER CLIMAX**—Split seconds after firing T-38 rockets down rails. Crew watch intently, know that tests are designed to save human life. Every man's report is important.





## NORTHROP

# NEWS BRIEFS

**BOARD OF DIRECTORS**—Northrop Board met at Northrop-Hawthorne for regular monthly meeting May 28. Quarterly dividend of 40 cents per share, payable 21 June to shareholders of record 9 June, was declared.

**DATICO DEMONSTRATIONS**—U. S. Army and Redstone Arsenal officials will visit Nortronics Systems Support June 16 to witness the first demonstrations of DATICO-automated checkout of Nike-Hercules anti-aircraft missile components. According to T. H. Quayle, Systems Support manager, this demonstration of progress on the DATICO project is part of a three-phase program under way at the Anaheim facility. Phase One involved an exhaustive study of the feasibility of DATICO-automated checkout of Nike-Hercules and U. S. Army missiles. Phase Two, of which the June 16 demonstration is part, covers the actual application of DATICO in development of a prototype. Phase Three will include delivery to the Army of a complete DATICO prototype and anticipated follow-on production of a universal test system for automatic checkout of Army missiles.

**BIGGER PAY CHECKS**—George Gore, Company counsel, advises that first check carrying blanket increase went to hourly-rated Norcrafters last week—this was check received on May 29. Raise of from 2 cents to 11 cents depending on labor grade, matches pattern now being set by the Southern California aircraft industry. "All major aircraft companies in this area are now following this new wage schedule," Mr. Gore stated. "Northrop increases are on a par with all those in the local airframe industry. This has always been a policy with the Company." An extra day off with pay was also granted. Norcrafters will realize this floating holiday benefit on December 24, the day set by management for first observance.

**PALMDALE TRANSFER**—Whitley C. Collins, Northrop president, received formal thanks on behalf of the Company from H. G. Hynd, vice-president-general manager of the El Segundo Division, Douglas Aircraft Company, Inc., "for the excellent cooperation and assistance during the recent negotiations in connection with the transfer of the Palmdale facility to the Douglas Company". Palmdale personnel were praised for the excellent condition of the facility at the time of transfer.

**RETIREMENT CARDS**—Records show that retirement card return is slow. Norcrafters are requested to return cards at earliest convenience in order that retirement records may be completed. Cards in question were sent to all personnel. This was so that each Norcrafter could specify whether or not he wanted half his credits up to August 1, 1957 converted to the variable. Deadline was June 1. Many cards are still out.

## General Power's Message



To all Norcrafters:

The Strategic Air Command is not a static organization and is tied neither to timetable nor traditions. As a fighting force-in-being, its primary concern must be its readiness to do its job—and do it well—whenever and wherever the need arises. At the same time, SAC must keep growing in step with the changing demands of the times so that it will be prepared to meet whatever challenge the future may bring.

To do its job properly, SAC needs—in fact, it must have—the very best and most advanced strategic weapons science and industry can build. In the production of the weapon systems, there is no room for anything but the highest quality and reliability in every component of each piece of hardware.

Norcrafters should be proud of their important role in building the SM-62 Snark, America's first intercontinental strategic missile, which will soon be phased into the operational inventory of SAC. I am confident that each of you will insure that the high standards which have become associated with the Northrop name are continued in the production of the Snark and the weapons systems which will follow it in the years ahead.

General Thomas S. Power  
CINCSAC

# A TOWER IN THE PLAIN

FIRST OF THREE ARTICLES ON SAC

## Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, June 4, 1958

## Strategic Air Command - - Arsenal for World Peace

### MISSILES, MEN AND A MISSION

The assignment was to do a story on the Snark going operational with the Strategic Air Command.

The travel orders read—go to Omaha to SAC headquarters. Go to Cape Canaveral and talk to the SAC people in Snark training there. Watch a missile go. Go to Eighth Air Force headquarters at Westover Air Force Base near Springfield, Massachusetts, for these are the people who will first accept Snarks into inventory.

Then go up to Presque Isle, the first city in the United States to

### By Aireporter

have an intercontinental guided missile. The first Snarks will be based in fields and wooded hills just outside of town there, and the trajectory tapes will keep them ready for the north flight over the top of the world, high across Canada and her woods and her snows for thousands of miles, across Labrador and across Greenland and the tremendous ice of those lonely lands, across the arctic circle, across the pole, down the other side like a flight of sea hawks, hunting. High and low, turning, wheeling, seeking.

Irrevocable, terrible, awful in their purpose.

But yet beautiful, long, pointed and efficient.

They will nest at Presque Isle.

You should talk to the people there, the assignment said. To the people of the town and the country of Presque Isle and tell them about the Snark and ask them about their feelings. Will they be afraid?

And if they are afraid, tell them that the Snark is like a soldier's rifle, to protect our land and our children. Only the soldier will be an airman, and his rifle will be armed with the greatest of weapons—the hydrogen bomb.

You will be gone a long time, relatively speaking.

"Yes," said Aireporter. "I had better pay my state income tax before I leave."

## Northrop Congratulates McDonnell F4H-1 Flight

The McDonnell F4H-1 made its first flight last week. This airplane—long under security wraps—is the Navy's newest and fastest jet fighter.

President Whitley C. Collins and Robert R. Miller, Northrop vice-president and general manager, have personally congratulated the McDonnell company on this fine accomplishment.

### SALUTE TO SAC

With this issue, the Northrop News prints the first of a three-part series on the Snark becoming an operational weapons system with the Strategic Air Command.

Northrop News Editor Charles Bradford and Lou Meyer, Northrop photographer, were accredited to the SAC establishment.

The trip took three weeks. Bradford (Aireporter) and Meyer visited SAC headquarters at Omaha, the new SAC missile squadron in training at Cape Canaveral, Eighth Air Force headquarters at Westover, and Presque Isle.

Sincere appreciation is extended to the Strategic Air Command, the Air Research and Development Command, the Air Defense Command, and the people of Presque Isle, Maine, for the wholehearted cooperation that made this story possible.

And he did this.

Two of them made the trip—Aireporter and photographer, Lou Meyer.

They were gone three weeks. They touched ground in eight states, rode on six different air-

(See Page 2.)

The F-4H is designed to fly at better than twice the speed of sound.

Norcrafters have worked on the F-4H since the first of the program. Design and manufacture of the F4H-1 outer wing, aft fuselage and empennage, as well as the manufacture of the inner wing, is by Northrop.

Mr. Miller also extended congratulations to all Norcrafters who have participated in the F4H-1 project.

He said, "Every person connected with the F4H-1 at Northrop is congratulated and should feel a note of pride in the successful accomplishment of this task. We have a major part in the F4H-1 and we are vitally concerned with the future of this fine McDonnell aircraft."

The F4H-1 was flown from Lambert Field—St. Louis' Municipal Airport. The airplane was the first production model.

Pilot was Robert C. Little, chief test pilot for McDonnell.

The plane is said to have the greatest range of any Navy jet fighter and is capable of destroying enemy bombers day or night in any weather at supersonic speeds.

Power is by two General Electric J-79 jet engines which are in the 10,000-pound thrust class.





**THE PLAINS OF NEBRASKA**—SAC communication towers reach to the sky. Their business is the peace of the world. SAC Air Policeman S/Sgt. Billy Davis stands guard. Sergeant Davis is a proud man and is symbolic of a proud outfit. His uniform is distinctive and is the badge of SAC headquarters. His side arm is a cross-draw chrome-plated .38 Special S&W. He wears a beret with the SAC crest. He's at least five-foot eleven. His military record can bear no blemishes. He is a volunteer.



**LIGHTNING AND THE OLIVE BRANCH**—Assembly line Snark at Northrop Field carries the SAC shield, symbolizing tremendous deterrent force-in-being. Snark weapons system was perfected by the Air Force and Northrop after a 10-year development program. Accuracy over great distances is demonstrated in flights from Cape Canaveral, Florida, to Ascension Island in the South Atlantic. Snark bulls-eyed target area repeatedly and under all kinds of weather conditions. Norcrafters Vlainie Harrell, Marlene Cox, and Hazel Norgaard wish God-speed, good fortune to this operationally-bound Snark.

## SAC — A Special Outfit For a Very Special Job

(Continued from Page 1)

lines, in a Hertz '58 Plymouth, and on a bus called the Peter Pan Line, not to mention taxicabs and Air Force station wagons.

One of the big problems on the trip was clean haberdashery. Meyer had drip-dry, wash-and-wear shirts. Aireporter's were the more conventional laundry types and, because of the time required, he almost lost them at Patrick.

The trip was a good one. They didn't get sick. They were always at the airport before flight time; they were always able to get hotel rooms. A suitcase broken and a pair of pajamas left in the hotel at Omaha were the only casualties.

The first leg of the flight was from LAX to Omaha.

### HEADLINES

The Strategic Air Command, SAC, is perhaps the most widely talked about, read about, speculated about military organization in the world today.

This national and international interest in SAC is no "Hanne-gan," as they say in publicity and press circles. SAC didn't set out to become headlines and then a legend.

It all started back in 1946 when the United States had a certain job that needed to be done. The job was to take the atomic bomb and make a weapon out of it. The atomic bomb was very special. The job of fitting it into America's military structure was a special undertaking. A special organization was needed.

SAC was born. General George C. Kenney was the first commander.

Four months later General Kenney and his heavy bomber boys, with the ink hardly dry on their orders, dropped their first atomic bomb. It was at the

Bikini Atoll.

They blew hell out of the atoll.

SAC looked good. At year's end they were a real going organization. They had two air forces — the Eighth and the Fifteenth; they had 37,000 people highly skilled in aerial warfare—men who had seen battle in the mass raids on Germany, on the long flights to Japan — men who liked the Air Force and who the Air Force liked in return—men who stayed on, although the angry shots were over, to establish careers that took them around the world and from tropic to tundra.

SAC spelled action from the very first. And whether they sought headlines or not, they got them.

They practiced attacking U. S. cities. In May of 1947 they sent 101 B-29s against New York City for the biggest strike.

They mapped all of Greenland. They made good-will flights to England, West Germany, Italy, France, Holland, Belgium, Saudi Arabia and Uruguay.

They got the B-36 bomber. They got the B-47.

At the end of the second year they had 50,000 people, 15 bases, 16 bomb groups, and five fighter groups.

### "THE OLD MAN"

The biggest SAC event in 1948 was General Curtis E. LeMay—"the Old Man"—taking command.

The emphasis was on reaction. SAC tightened her coils. How soon can we fight if we have to? And how far can we fly? In-flight refueling, the first in Air Force history, took place. A few months later General LeMay's Lucky Lady flew nonstop as far as anybody could go and stay in the earth's atmosphere — around the world!

SAC demonstrated reaction time when called to Korea. It took them nine days from deployment in the United States until the bombers were in Korean skies.

SAC grew.

In 1950 they had 84,000 people. In 1951 it was 142,000. In 1953 it was 171,000. In 1956 it was 217,000.

### THE ARSENAL

And SAC had weapons—the B-47, the B-52, the B-36, and C-97 tankers.

They were a global striking force with a peacetime mission of deterring communist aggression and a wartime mission of destroying communist war-making capabilities.

And something new was added that year. Something so new in the annals of military activities that new war concepts were required.

SAC bought its first guided missile—the Northrop Snark—a 6000-mile ranging near-sonic brute with heavyweight muscle and bone and a mind of its own on a reel of tape.

### HYDROGEN BOMB

You pushed a button to fight the Snark. You pushed a button and a hydrogen bomb with swept wings barrelled out with a clap of thunder that became a snarl, a pulsethrob of power.

SAC was in the guided missile business. The Snark would save pilots' and crewmen's lives.

But the old pilots looked a long time at the Snark. The men of Truk, Polesi, Hiroshima.

"No man in that airplane," they said. "This is pushbutton warfare for sure. And where do we fit in?"

"Listen," SAC said to them. "This is an organization of men."

"You will fly airplanes," said SAC to them. "You will fly the '52 and the new KC-135, and you will fly the '58. This Snark will complement you, not replace you."



**ZERO LAUNCH**—Snark blasts off for Ascension at Cape Canaveral. Giant booster bottles hurl the missile into the air. Bottles are jettisoned when missile is airborne—J-57 engine takes her up, on and out.

**Northrop News**

Vol. 16

Northrop Field, Hawthorne, Calif.

No. 18

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CHARLES BARR, Director

CHARLES BRADFORD, Editor

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#### THE PUBLIC VIEWPOINT—

Aireporter, left, as with all newsmen assigned to SAC headquarters, receives comprehensive briefing on the operations of the command. Center is Captain Jerry Dalton, chief, Internal Information Division, Office of Information. At right is Captain J. J. Brady, deputy chief, Public Information Division, SAC Headquarters. They inform populace.

#### SAC HEADQUARTERS AT OFFUTT AIR FORCE BASE

The outside world arrives at SAC lobby with customary symbol of business travelers—the brief case. The visitor is given a distinctive badge which he keeps and prominently wears during his stay at Offutt. SAC headquarters is new building — modern, light, airy. But there is no sign outside. Inside is the great seal of the Strategic Air Command — lightning and an olive branch clenched in a mailed fist.



Take it—it's a good piece of hardware."

"Supposing we want to give it a try. Supposing we want to work the Snark and leave the



**DEEP**—Captain Jerry Dalton leads Aireporter deep into SAC's underground command post complex.

'52s for others? Where do we fit in then? What's our missile job?"

"Leadership is the greatest asset a military organization can have. You are leaders of men. Your job in missiles will be squadron commanders, launch officers."

"How about our flying time?"

"You will fly," said SAC. "Arrangements will be made so that you get your hours in."

#### THE ALTITUDES

Flying is the life's blood of the proud men of the Strategic Air Command. Take away the time in the altitudes, take away the global jet miles, and you take away the SAC man's birthright, his guts, his pride in being a SAC man. And SAC men are proud men.

"In SAC," said Warrant Officer Howard E. Palmer at hangar G on Cape Canaveral as he worked late on his checkout systems, "things get done. SAC says they are going to do things and they do. A man likes this."

The Snark Squadron, the 556th Strategic Missile Squadron, was activated in December of 1957, Colonel Richard W. Beck commanding. He is a 16-year man in the Air Force and a command pilot. Officers and men of the 556th are now at Cape Canaveral studying the Snark. They will go to Presque Isle to be the very first.

You find Offutt Air Force Base on a high and windy hill out of Omaha, Nebraska. You have flown the flight from Los Angeles with a stopover at Denver. The brown, crinkled, audacious-with-mountains earth of California and the four-states area has given way to the white-with-snow gently rolling plains of the great valley.

#### SAC HEADQUARTERS

The building is tall and spartan in its military simplicity and efficiency. It is three stories high and the airmen call it "Tower of Power" after SAC's new CO—General Thomas S. Power, who took over the vast fighting machine when General LeMay moved to Air Force vice-chief of staff in the Pentagon on July 1 of 1957.

The airmen mean no disrespect to General Power. Rather it is evidence of the respect they hold for him. It is their building



**SECURITY**—On way to SAC underground command post, Aireporter's identification is checked by Air Policeman S/Sgt. Jack Gensler. SAC security is quiet, unobtrusive, but with absolute and thorough efficiency.

too. For SAC is one airman and it is 224,000 airmen. It is a B-52 bomber and it is a non-stop flight around the world. It is an atomic bomb and it is a computer punching out a trajectory tape 45 feet underground beneath the Offutt headquarters buildings.

SAC is many things to many men. It is many things to the world.

SAC is a mailed fist. For a few men, this fist holds lightning. For millions of men this fist extends the olive branch.

SAC's General Tom Power is as much SAC as the airman, as a B-47, as a launch officer in the new Snark squadron. He is 53 years old. He is a command pilot. His World War II decorations include the Distinguished Service Medal, Silver Star, Legion of Merit with one cluster, Distinguished Flying Cross, Bronze Star Medal, Air Medal with one cluster, Commendation Ribbon with one cluster, and the French Croix de Guerre with palm.

#### THE HEAD MAN

But most of all he is SAC head man.

And on his shoulders—next to the President of the United States—rests the responsibility of the free world should there be war.

It took nine days for SAC to fly its bombers over Korea. How long would General Power take to put his force in action as of today?

Fifteen minutes!

Actually how does SAC achieve this reaction time?

First—by open line communications up the line to the highest authority in our government, down the line to the farthest SAC base. Second—by training, and third — as Warrant Officer Palmer said, "When SAC says something is going to be done, it get done."

#### NOT COMPLICATED

SAC is not complicated. But the thing that SAC is tuned to fight against is complicated.

SAC is as direct as a bullet. Its target always remains in the cross-hairs. No matter how devious, evasive, politically or ideologically, as far as SAC is concerned, the target is stationary. A wrong move over the bulge of the earth—

And to keep watch, SAC sees the world from deep in the earth where great moving screens with weather, aircraft flights, all information pertinent to SAC's job,

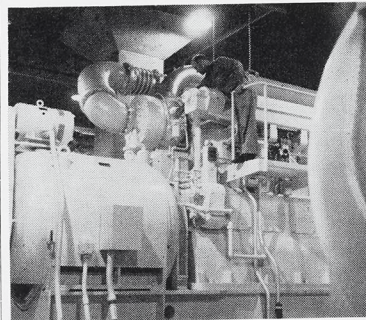
are detailed two stories high. And television cameras watch constantly.

#### BATTLE TRAJECTORIES

Close by, computers trace battle trajectories—tapes and red lights—electronic minds forever turning.

And there is the great message center—264 people process 3000 to 6000 messages a day.

And close by is a small room where SAC has lifted the techniques of America's ham operators and you can talk to Madrid as easily as you can talk to Castle, or if it's Morocco or England or any of the other SAC bases, you can talk to them too—all 32 of them at home and



#### GIANT DIESEL ENGINES

purify the air, generate power for the underground command post. Engineer Robert Mayer of Bellevue, Nebraska, performs one of a constant series of preventive maintenance checks.

27 overseas. This includes Thule.

"We can always get them," said S/Sgt. Ernest Martin of Columbia, South Carolina. This is called a single side band. It's simple and direct and sure. It's ham equipment. We are 45 feet underground. We could communicate under the most extreme conditions.

And there are the great pumps in a special pump room—for water and for air.

And there are the guards, special guards. SAC's own. Proud men. Chrome-plated .38 Smith & Wesson side arms in cross-draw holsters, berets, blue web belts,

mahogany boots. Each one of them over 5 feet 11 inches tall.

They are as smart as Air Academy men. The finest of the very finest.

Men come and go at SAC headquarters.

Military and civilian.

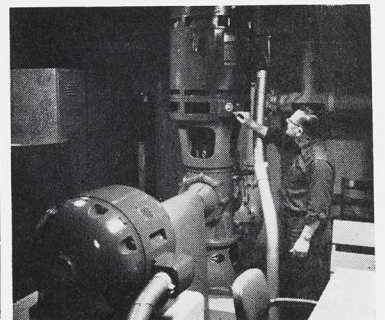
Squadron commanders from the four corners of the earth—for battle plans, for assignments, for briefings, and to report personally to General Power on accidents. SAC is one of the safest military flying organizations in the world. This wasn't always so. In 1950 there were 54 accidents for every 400,000 hours flown. Today there are only 20.

#### COMPANY MEN

Civilians coming to SAC are many and varied. Company men, VIP's from the 48 states and Washington, D.C., and men of press and television. Men with things to sell, men with ideas.

SAC briefs them and eats lunch with them in the fine officers club where the walls are done in 3-D global theme.

They stay in the hotels in



**DEEP WELL**—SAC's water supply in underground command post is assured should the fury of atomic war sweep the land. Civilian Clark Stricklett, Bellevue, Nebraska, is one of the men who keep watch on this vital equipment around the clock. "We can't gamble," say SAC leaders.

downtown Omaha. In the evening they do as Omaha folks do—eat the wonderful steaks that the city is known far and wide for—corn-fed steers. The bounty of the Mississippi Valley at its finest.

(See Page 4.)

**A MISSILE STRIKE**—On tape, filed, row on row, in the deepest level of the SAC underground command post, these tapes would send Snark missiles on their way. Here Captain Joseph Garcia, programmer, Porto Rico, selects a tape for missile test strike. A hydrogen bomb on target could be the last intelligence factor inscribed on this strip of brown plastic tape. No city or place in the world, however disguised, would be immune from retaliation.



**COMPUTER ROOM**—Ingenious mechanical brains do the work of thousands. M/Sgt. Richard G. Bates, Harrisburg, Pennsylvania, programmer, scans tab sheet in SAC underground command post. Computer room is immediately adjacent to television room. Equipment is world's most modern.



**PANORAMA OF THE WORLD**—On these giant screens deep in SAC's underground command post, everything in the world that could pertain to SAC operations is constantly portrayed. Position of every airborne SAC airplane can be shown here. Snark's readiness, the weather between here and there, the fighting condition of every base and every squadron is portrayed in minute detail.

## The Missileairman—SAC Assigns Her Very Finest

(Continued from Page 3)

Aireporter talked long to Colonel Dale L. Shaffer, chief, Plans and Project Division, Directorate of Personnel.

Coffee was served.

"Is there a difference," Aireporter asked, "between a B-47 bomber man and what a Snark man will be?"

"Not from the SAC viewpoint," said Colonel Shaffer. "A man's environment, his background, and being able to speak the vocabulary are the things that make him go. The missile man will come from the bomber

ily, and his American heritage.

"The vocabulary is the thing—in certain areas of the missile there will be a new language. But with two of the necessities, the third shouldn't be too long in coming.

### BOMBERS TO MISSILES

"We are phasing men from bomber outfits to missile outfits. First, there is the manpower requirement. Then come the nominations, then Personnel processes the selection and, with the selection, the man is assigned."

"What are the criteria used when a man is nominated and then selected for missiles—for the Snark?"

"Northrop has given us the type of experience and training a man should have in the various technical areas to make a start with missiles.

"General Power, on 21 December, in his directive on personnel support for the U. S. Missile program, ordered that only the highest quality personnel be selected for missile units."

"For both officers and airmen—they must be career men?"

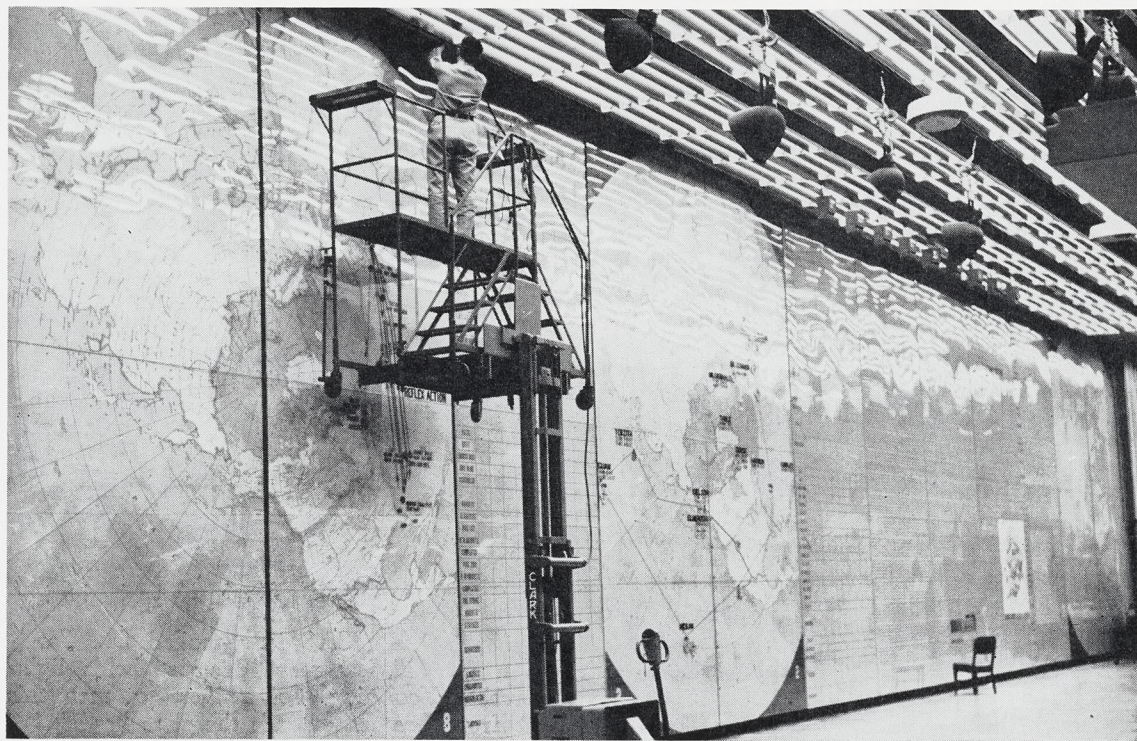
"For the officer—being a pilot helps, but it's not necessary. He should have completed a college-level course in theory of electricity and electronics.

### MATH KNOWHOW

"He should have a knowledge of math through differential equations.

"A degree in electrical engineering is desirable.

"An officer, to be appointed to the Snark, will have his effective reports screened back through 1951. He must be either outstanding in all degrees or in the top of the very fine category—



**SAC MANPOWER**—Colonel Dale L. Shaffer, chief, Plans and Projects Division, Directorate of Personnel, SAC headquarters, briefs on what the SAC missile-airman will be. By order of General Power, SAC's missile men will measure with the highest and finest in American military forces.

squadrons. That is his environment — military, working with aircraft, being sensitive to an atmosphere of battle. His background made him a bomber man in the first place. His background is his education, his fam-



the first level below outstanding. And outstanding is the highest. His character, his job knowledge, his age, growth potential, and his ability to get along with people are the factors that write his reports. Above all—he must be a leader.

"There is one qualification that is ironclad. He must have had no black marks in his folder.

### LONG SCHOOLING

"For the airman—his retainability factor must be high. We do not specify a minimum number of service years left to a man, but he must be career. He should have two and a half years left because his schooling will consume from four weeks to five months, depending on how technical. He must be fully qualified in his specialty and, as with an officer, he can have no black marks in his service records."

"The commanders must quali-



**SAINT BERNARD!**—SAC base in Madrid comes in strong and clear. Single side band men—S/Sgts Ernest Martin (standing), Columbia, South Carolina, and Marshall Bolinger, Indianapolis, Indiana — contact far points of the SAC system of deterrent force with compact but powerful "ham" radio equipment.

fy the man, technically and morally."

"Many college men will look to SAC for missile careers," said Aireporter, "what shall I tell them?"

"Tell them to take ROTC in college. Tell them to study the sciences—math, physics, chemistry, electrical engineering."

"So a man can know his worth—what is the greatest asset he can bring to SAC?"

Colonel Shaffer answered

without pause. "Leadership—Leadership and the ability to absorb training."

"Can a man learn leadership?"

Now Colonel Shaffer did pause. This was an evaluation of the great and mysterious mechanism that is man.

"Leadership can be learned," he said, "but soldiers have died with this bitter knowledge in their mouths—a man has to be born with some of it."

Aireporter began to take leave of the Personnel people.

It had been an education in one afternoon. The picture was a large canvas done in minute detail.

### SPACE AGE BEGINS

This was the beginning of the space age here in the SAC tower—John and Mary Doe's part of the space age. The men to come from SAC's computer rooms, communication centers, her deeply buried control rooms her missile squadrons in the woods of Maine, were to be the nucleus of a new and greater breed. Their horizons would be the towering limitlessness of the infinite. Their frontiers would be the rich and golden shores of the silent planets.

And through their training and development America would reap the richest harvest in his-



**THE SNARK**—The Snark squadron will be self-contained. Lieutenant Colonel A. J. Meyers, deputy chief, Missile Maintenance Division, explains to Aireporter SAC concept of all-important maintenance factor for Snark missiles. Model is one built especially for SAC maintenance studies by NAI.

tory. Their knowledge would be more valuable than the diamond pipes of Kimberley, than the oil-soaked anticlines of California.

**ASCENSION BOUND**—Giant booster bottles spouting flame, jet engine thundering, this Snark has just zero launched from her mobile platform. Ascension Island is 5000 miles away. In the next issue, Aireporter witnesses a Snark launch from Cape Canaveral—at three in the a.m.



**NEVER ENDING**—Captain Roy E. Dolson, top man in SAC's message relay center, runs spot check on the miles of coded tape that issue from his machines. Up to 6,000 messages a day (24 hours) is routine for Captain Dolson's people.



**MESSAGES**—Helen Stefanski A/IC, router, and Dolores Bastiani, A/2C, logger-in, perform necessary duties as messages flow past them in SAC's underground relay control area.

"This brings one last question," said Aireporter, "is the American taxpayer getting his money's worth?"

"The American taxpayer," said Colonel Shaffer, "will collect dividends from now until the end of time."

It was late—the sun from the west was golden on the SAC tower. The wind had died and the wide Nebraska plain was quiet.

Aireporter and Lou Meyer, photographer, shook hands with Captain Jerry Dalton of the Public Information Office, a small dynamic man, but as tall as SAC in his drive and purpose.

### COLONEL VAN VLIET

"Look up Colonel Van Vliet at Westover and Captain Martin at Loring."

"Okay—"

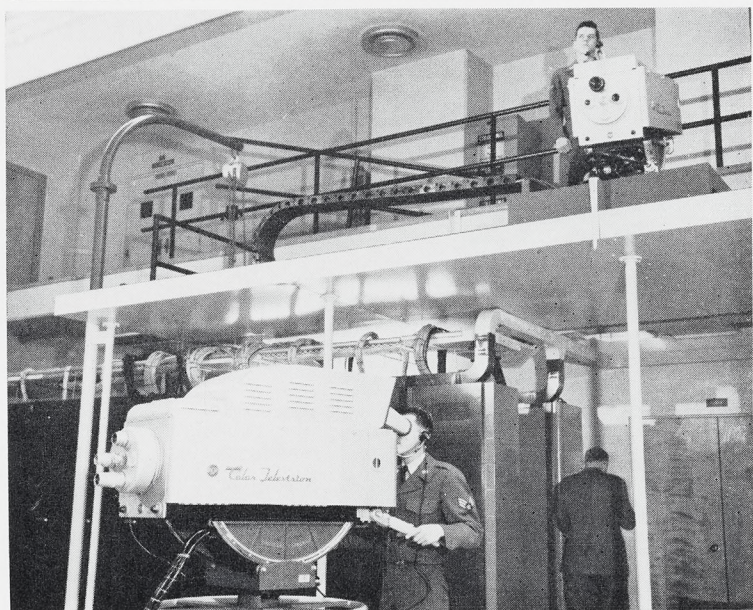
"It was good working with you."

"Same here. We appreciate all the help. If you ever need anything—Good-bye."

Aireporter and photographer went back to Omaha.

(See Page 5.)





**TELEVISION**—Television cameras keep constant watch on SAC global status. Picture can be transmitted to the Pentagon, and even to the President of the United States.

The next morning they would catch the 5:30 a.m. airplane to Chicago as the first leg of the journey to Cape Canaveral.

#### CHECK AT CHICAGO

"How early can you catch an airplane?" they asked each other.

That night Aireporter left a call for 3:45 a.m. to allow plenty of time for shaving and packing and trouble that always seems to crop up at the worst moments.

Then, remembering how it was in the old days of traveling, he left another call for 4 a.m. Often in the night a man will answer the phone and go back to sleep while trying to adjust from sleep to consciousness.

And the phone did ring at 3:45 a.m. and Aireporter got up

and shaved. And while shaving, the airline called three times unraveling the flight to Melbourne.

At first there were no accommodations beyond Chicago.

"You've picked a bad day to go south," said the girl at the airline over the phone. "Everybody starts south on Friday."

"We don't have a 32-hour week on the coast," said Aireporter.

"I don't see how they do it," said the girl, "we don't have a 32-hour week here either."

"Refugees from staff meetings, I guess," said Aireporter.

"Check in at Chicago," she said.

"All right."

"And there will be breakfast on the Omaha-Chicago flight."

Aireporter went back to shav-

ing.

She called again.

#### FLIGHT CONFIRMED

"Mr. Bradford — your flight from Chicago to Atlanta has been confirmed."

"Fine—thanks."

"And there will be breakfast."

"Fine—that makes two breakfasts."

And when nearly finished shaving—the phone rang again.

"This is like the office," said Aireporter. With razor and towel in hand and without clothes, he answered the phone again.

"It's four o'clock," said the night clerk.

"Thanks—okay."

Outside, feeling freshened and now wide awake from the cold Omaha water shower, Aireporter noted that there were no stars and that the air seemed saturated with moisture.

"More snow," said the cab driver. And they rode silently then to the airport with the silence broken only by the cab's two-way radio. Somewhere in the dark city a girl directed the business of the cab company.

#### TO THE AIRPORT

"Three-six-four — Farnham and 17. Bye."

"Fifty-seven—fifty-seven."

"I hear you—. No, the passenger is still waiting."

They made the long turn just outside of Omaha and were able to see the beacon at the airport.

"Airport's in Iowa," said the driver, "river shifted."

The airplane was from Los Angeles and the people were

sleeping deeply.

It would be 13 hours to Melbourne.

At Chicago everything was confirmed. The flight to Atlanta, the flight to Melbourne.

They stopped at Atlanta and the southern accent was pleasant to the ears.

They arrived at Melbourne at 6 p.m.

Tired.

They rented a new red Plymouth from Hertz.

They took the new red Plymouth and found their way to Cocoa thinking this would be Cocoa Beach.

Cocoa Beach was 10 miles more.

They missed their motel, went back and found it.

There was the process of checking in. Put the bags down. Wash your face and hands. Stretch.

#### LONG RIDE

"That was a long airplane ride," said Aireporter to the photographer. And when he went to bed that night, he discovered that he had forgotten his pajamas in Omaha. He guessed it must have been the airline girl and her phone calls.

The next day was Saturday, and there was nothing to do but work and write letters home. It was a fine day. Many people were on the beautiful beach. They drove their cars right out on the sand, Aireporter noted.

After working and writing letters, there was nothing to do but watch TV and read.

That was Saturday.

The next day was Sunday—it rained.

#### IN THE RAIN

Quite heavily—it rained all day.

There was nothing to do but work.

Aireporter walked in the heavy rain up to the Vanguard Motel, a fine edifice on the edge of the sand, and had breakfast.

The accent was from across the states to the west and below the Mason-Dixon.

"You want grits?" asked the waitress.

"Yes, I want grits."

It was grits and ham and eggs and toast and coffee and orange juice.

He read the Sunday paper at breakfast. A story discussed what amounted to a successful missile test. "Not blowing up on the pad," said a scientist from the Cape.

"A successful test is one which accomplishes the objectives for which the missile was originally designed," stated the scientist.

Four times out of four for the Snark, thought Aireporter.

"We learn from the failures," said the scientist. "That is all."

Aireporter learned that Titusville was erecting a new sign at the city limits—a rocket blasting from a launch pad—"Titusville, the missile city."

"This is missile country," said the photographer.

(Next issue — Aireporter sees a Snark zero launch at three a.m. and does "man-in-the-street" interviews with Colonel Beck's men.)

## IAS Explores Space Lore—Missiles to be Spotlighted

For three days next month, the Ambassador Hotel conference rooms will echo with the technology of tropospheric to extra-terrestrial flight.

The Institute of the Aeronautical Sciences National Summer Meeting, July 8 through July 11, offers 17 lecture sessions. The opening conclave canvasses applied aerodynamics and the final session on the agenda is a field trip to Long Beach Municipal Airport, where 11 domestic and foreign turbine-powered transports will be examined.

The field trip July 11 and a

session July 8 on missile structural design will be coordinated by Bill Oakes, Structures engineering specialist. Paul Holliday, Advanced Design engineering specialist, is coordinator of the meeting devoted to hypersonic vehicular structures.

Incorporated within the program, in addition to the day and evening meetings, are two luncheons and a banquet.

Although the majority of the meetings are open to nonmembers, the six classified sessions are restricted to IAS members with appropriate clearance.

## Nortronics Chanteuses



## Weiss Joins Seminar for AF Research

The second Summer Working Conference, under joint sponsorship of ARDC and National Academy of Sciences, is again slated for Woods Hole, Massachusetts.

Herbert K. Weiss, chief, Weapon Systems and Analysis, has been invited to join the approximately 50 participants. Since the majority are from academic ranks, Weiss' selection is an especial honor.

The two-month seminar will be chaired by Dr. Theodore von Karman, chairman of the NATO advisory group for aeronautical research and development.

The conferees will continue

#### A LA HELEN MORGAN —

The five piano-perching thrushes are, from left, Jean Nealy, Roberta Krans, Betty Busenberg, Frieda Elsworth and Dottie Kearney. Blowing a mean horn is Eddie Truax and making like Shearing is Bert Meyers. Last weeks' Nortronics gala inspired this impromptu chorale society. Nortronics' folk made this first dance a "stomping" success.

the study initiated last summer, embracing various facets of aircraft, guided missiles, space vehicles, propulsion, electronics, guidance and control, materials, weapons, life sciences and geophysics.

Conference objective, as before, is scrutiny of Air Force problems and aims from the long-range perspective.

## Norcrafter Boys Execute Coup in Gymnastic Joust

Last month's National AAU Meet served as a foil for the athletic aptitude of Norcrafter boys.

UCLA freshman Lindy Baer, 18-year-old son of C. L., Weight Engineering engineering specialist, copped 5th place in Free Exercises.

Dual triumphs were registered by 17-year-old Don McLarty, Hamilton High graduating senior, whose duly proud pop, Don, sr., is Boeing Wing assistant foreman. Don, jr., proved himself proficient in both Swinging Rings and Still Rings, placing 3rd in the former event and 6th in the latter.

The foreman of Boeing Wing section, Leo Sacks, may also boast of gymnastic exploits. His 17-year-old nephew, David Paley, another graduating senior of Hamilton High, tumbled his way to 9th in Tumbling.

Baer and McLarty have been asked to join in representing the United States in the Canadian National Meet slated for Vancouver next month.

## CAFETERIA WINS MERIT AWARD FOR FOOD SERVICE

Northrop's modern cafeteria facility has received distinctive recognition from the food service industry.

A merit award for superlative achievement in food service and sanitation was presented to Northrop by Institutions Magazine during the annual food service contest.



#### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 3)

VALLEY BLVD. & PASS AND COVINA ROAD, La Puente. (Desire car pool.) LE-ROY DICK (7721-26691, ext. 2568). 2-3

(Zone 5)

BROOKHURST & ORANGETHORPE, Fullerton. L. J. GODDARD (5561-18899, ext. 1280). LA 5-8045. 2-5

(Zone 10)

PACIFIC & ARDMORE, Manhattan Beach. (Car pool desired.) E. T. HAMPTON (3413-30626, ext. 445). FR 9-4653. 2-10

(Zone 13)

CENTINELA & MARKET, Inglewood. PETE SAN ROMAN (5503-51919, ext. 2216). OR 1-5893. 2-13

7:30 a.m. — 4:15 p.m.

(Zone 5)

KNOTT & CRESCENT, Buena Park. (Established car pool; have parking pass.) JACK TRANT (5120-50170, ext. 1904). JA 7-0132. 3-5

#### RIDES WANTED

7:30 a.m. — 4:15 p.m.

(Zone 7)

NORMANDIE & 204th ST., Torrance. F. A. BIGLER (2537-15423, ext. 2661). DA 3-4491. 3-7

(Zone 9)

CARSON & AVALON, Torrance. SYLVIA HART (1310-41792, ext. 1801). TE 9-5472. 3-9

(Zone 9)

INGLEWOOD AVE. & GATES, Redondo Beach. GRACE BLACKMER (4310-54356, ext. 2664). 3-9

(Zone 12)

VENICE BLVD. & INGLEWOOD BLVD., Culver City. (Consider car pool.) C. V. KIESEWETTER (2536-33276, ext. 2488). EX 8-5360. 3-12

8:00 a.m. — 4:45 p.m.

(Zone 1)

SANTA MONICA BLVD. & WESTERN, Hollywood. HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 5-1

(More GMW, Page 6)



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

SIMCA, 1956 station wagon, \$1200. DA 4-1553. A  
 INCOME PROPERTY, Lawndale, 2-bdrm house w/ 2 1-bdrm rear apts. DA 9-5816. A  
 MOVIE CAMERA, Keystone K27 8-mm, 3-lens turret, cost \$100, \$80. FR 5-4574 before 7 p.m. A  
 SLOOP, 21' midget ocean racing-type new dacrons, cushions & lines, cost \$4800, \$2500. OW 7-7918. A  
 HOUSE TRAILER, 18', w/TV, \$225. Box 1803. A  
 RECORDER, Amprotape 731. OS 6-8444. A  
 HI-FI EQUIPMENT, tape recorder-playback, VM Tape-O-Matic 700, stereo \$120; turntable, 3-speed; mike. GR 2-2031. A  
 ARCHERY BOW, Wonderbow, glass, 52-lb pull, w/12 matched custom arrows, \$25. DA 3-4932. A  
 SPORTS EQUIPMENT, ski bindings, Cubco; ski boots, Reiker, men's size 13; golf shoes, Foot Joy, men's size 12 1/2-13. AX 5-1183. A  
 SEWING MACHINE, Domestic console, walnut, attachments. TO 6-5703. A  
 CIRCULAR SAW 6", attachment for Millers Falls 888 power unit, \$15. TE 2-6746. A  
 DINING ROOM SET, mahogany, table, 6 chairs, buffet, \$50. PL 5-6648. A  
 LIVING ROOM SET, 3-pc, provincial, sell separately or \$100. FR 2-0901. A  
 STUDEBAKER, 1952 Commander V8 convertible, \$160. OR 4-3376. A  
 REFRIGERATOR, 1945 Hotpoint 6 cu ft, \$35. OR 1-6460. A  
 TRAILER, box-type, Chevrolet 6.00x16 wheels, \$60. UN 3-4067. A  
 MOTOR SCOOTER, Powell, \$35. DA 4-3217. A  
 CHEVROLET, 1937 coupe, \$30. PL 6-5495. A  
 SUIT, boy's size 20, tan, \$15. OR 4-1847. PL 6-2467. A  
 SEWING MACHINE, Westinghouse rotary-type console, mahogany, \$25. FR 5-5760. A  
 HOUSE, 3-bdrm, w/w carpeting, drapes, patio, landscaped, down \$1500. TO 6-5438. A  
 POWER MOWER, reel-type, overhauled Bria & Stratton engine, \$25. GA 7-8553. A  
 FREEZER, Deepfreeze chest-type, 24 cu ft, cost \$600, \$325. Box 1806. A  
 HOUSE, 3-bdrm ranch-type, 2 baths, Palos Verdes, 4 yr old, 1/4-acre lot, view, \$26,850. FR 5-5446. A  
 TRAILER, 4'x8' utility-type, 2-wheel. DA 9-6903. A  
 KAISER, 1951, 1 owner, 50,000 miles, new tires, overhauled engine, \$350. EX 9-8381. A  
 CAMERA, Kodak folding bellows-type, postcard-size pix, \$5. EX 8-8365. A  
 ARCHERY BOW, yew wood, 45-lb pull, w/matched broad-head arrows, accessories & case, \$35. JA 7-4378. A  
 HOUSE TRAILER, 1956 Mobile Cruiser 30', Eastern-bilt, OS 6-9253. A  
 MOTORCYCLE, 1954 F.B. 200-cc, \$125. OR 1-1660. A  
 CHEVROLET, business coupe, \$100. DA 4-8853. A  
 CAMERA, Rolleiflex, Tessar lens, flash, portrait lens w/range-finder, filters, cost \$310, \$175. Box 1807. A  
 BICYCLE, girl's sidewalk-type, \$17. FR 5-4763. A  
 REFRIGERATOR, Hotpoint 9.5 cu ft, 4 yr old, \$80. TE 3-5573. A  
 BUICK, 1950 4-dr, \$150. OR 4-0358. A  
 REFRIGERATOR, 11.5 cu ft, 8 yr old, \$50. OS 5-2159. A  
 REFRIGERATOR, Westinghouse 7 cu ft, 6 yr old. TO 2-3758. A  
 TIRES, 4, General white-sidewall, 6.00 x16, tubes, \$70. PL 4-7628. A  
 LIGHT FIXTURES, fluorescent, \$6 ea. OS 5-7924. A  
 CABIN, Lake Arrowhead, furnished, fully equipped for all-year living, sleeps 10, utilities, heat thermostat, paved road, creek, terms, \$4750. OR 4-1783. A  
 SEWING MACHINE, Adler portable, \$125. OS 5-9586. A  
 TV SET, G.E. 17", \$55. Box 1811. A  
 PUPPIES, boxer-German shepherd, 3-mo old male & female, \$5. OS 5-9796. A  
 PLYMOUTH, 1949 station wagon, \$200. OS 6-5958. A  
 CHEVROLET, 1953 convertible, Power-alide, \$600. ST 9-5791. A  
 CRIBS, 2, \$15 ea. CL 7-3140. A  
 REFRIGERATOR, 1951 Servel 11 cu ft, \$40. DA 3-4580. A  
 PIANO, Kurtzman, bunqalow upright, \$180. TE 3-0843. A  
 FURNITURE, living room set, maple, green & white upholstery, sleeper divan, 2 chairs, 3 tables, \$150; draw drapes, Fiberglas, rose & white; curtains, bamboo, yellow. JA 7-8745. A

## FOR SALE

WELDING GENERATOR, P&H WF300 d-c, variable 30-375 amp/20-40V, 2200 rpm. Box 1808. A  
 SUNBEAM, 1954 Alpine, \$1050. FR 5-6773. A  
 JEWELRY, wedding set, band & 1/2-carat diamond ring, \$145; earrings, 1/14-carat diamond. Box 1809. A  
 HOUSEHOLD FURNISHINGS, 3-bdrm house outfit. PL 9-0411. A  
 REFRIGERATOR, Frigidaire 7 cu ft, \$45. FR 5-4271. A  
 BEDROOM SET, blonde, double bed, headboard, dresser, mirror, \$75. FR 8-2648. A  
 SOFA BED, rose-beige & chocolate, embossed rayon, \$50. OR 7-7066. A  
 BENCH SAW, 6", \$22.50. PL 5-7521. A  
 AUSTIN, 1950 A40 4-dr, \$100. UN 8-1303. A  
 APPLIANCES, washer, Bendix automatic, \$25; refrigerator, Philco, \$50. PL 3-8758. A  
 AUSTIN HEALEY, 1956 100, extras, \$1995. FA 8-2878 after 8 p.m. A  
 ROLLER SKATES, Chicago Hyde white rink-type, women's size 7, wooden wheels. DA 5-0513. A  
 ROLLER SKATES, white rink-type, women's size 8 1/2, \$12. OS 9-1307. A  
 MOTORCYCLE, Aerial Square Four, chrome, custom. DA 4-2395. A  
 SEWING MACHINE, Singer portable, case, attachments, \$30. FR 6-1832. A  
 TRAILER, 6'x8' box-type, 2-wheel, \$100. OS 9-3188. A  
 CHRYSLER, 1951 New Yorker, power equipment, \$350. PL 5-0867. A  
 BOAT, 28', sleeps 6, inboard, galley head, bait tank, \$4400. FR 2-9061. A  
 TRAILER, box-type, 2-wheel, 6.00x16 tires, \$28. PL 5-2412. A  
 TENT, 9'x12' sidewall-type, \$20. UN 4-4954. A  
 BRIDAL OUTFIT, dress & veil, size 11-13, satin w/lace, full-length w/train, \$60. DA 9-1991. A  
 TV SET, Hoffman 17" table model, \$20. DA 3-1479. A  
 OVERLOAD SPRINGS, Air Lifts, fit leaf springs only, \$8. OS 6-3726. A  
 ORGAN, Wurlitzer 4602 electric, walnut, double percussion, Leslie speaker, \$3000. OS 5-9076. A  
 MOTORCYCLE, 1948 Indian Chief, full road equipment, leather saddle bags, OS 5-6947. A  
 ENCYCLOPEDIA, Britannica, 24-vol set, w/2-vol dictionary, atlas & bookcase, assume \$15/mo payments totaling \$300. DA 3-1513. A  
 ORGAN, Hammond S1 chord-type, walnut, bench, \$495. DA 6-7877. A  
 RECEIVER, Hallicrafter SX99, matching speaker, \$100. FR 9-4549. A  
 FURNITURE, dinette set, blonde, \$25; bedroom set, \$50; floor covering, Manila hemp. OR 1-6661. A  
 MOTORCYCLE, 1953 AJS 30:50 twin, new paint & chrome, full cams, ported, lite flywheels, extras, \$475. PL 6-4836. A  
 VOLKSWAGEN, 1956 sedan, \$1325. FA 8-0980. A  
 MOTORCYCLE, 1957 Matchless twin 600-cc, chrome, windshield, \$685. OS 6-8321. A  
 ELECTRIC ROASTER, Westinghouse, cabinet, timer, \$25. DA 9-1019. A  
 REFERENCE BOOKS, encyclopedia, Funk & Wagnalls, 28-vol set, yearbooks, \$35; Works of Famous Authors, 38-vol set, \$35. OS 5-0208. A  
 TV SET, Philco 21" console, mahogany, doors, \$125. FR 6-4141. A  
 BICYCLE, racer-type, 6 mo old, new heavy-duty tires & tubes, extra set of lightweight tires, \$30. OR 4-7422. A  
 CAR PARTS, manifold, Fenton dual intake, w/2 Stromberg 97 carburetors, 1946-50 Mercury accessories, DA 3-0979. A  
 PIANO, upright, maple, refinished, re-wired & tuned, \$150. OS 5-7661. A  
 MG, 1948 TC, restored, concours condition, metallic mandarin red w/white top. PL 3-7297. A  
 BOAT TRAILER, 16'-24' boat capacity, \$135. Box 1812. A  
 HILLMAN MINX, 1956 convertible. OR 8-8306. A  
 CABIN CRUISER, Chris-craft 18' glassed plywood, Star inboard, flying bridge, bait tank, 5 life preservers, trailer, down \$800, \$1700. FA 8-7796. A  
 SHOTGUN, H&R Gamester 12-gauge 3-shot, bolt action, variable choke, \$25. OS 9-3221. A  
 TV SET, RCA portable, OS 6-8050. A  
 CHILDREN'S CLOTHING, girl's sizes 4-6, teddy bear coat, dresses, skirts; boy's sizes 6-18 mo, suits, others, FR 9-9616. A  
 DIAMOND, approx. 40 pts, man's yellow aold setting, \$95. FR 4-4140. A  
 HOUSE, 2-bdrm stucco, corner lot, attached garage, down \$1000, \$8750. OS 6-6551. A  
 CRIB, waterproof mattress, cost \$54, \$15. FR 5-4642. A

## FOR SALE

MERCURY, 1951 sedan, engine needs work, \$50. FR 4-0305. A  
 CHEVROLET, 1958 6-cyl, stick shift, assume 31 GMAC \$74.31/mo payments or \$2040. DA 6-3075. A  
 WASHER, 1956 Norge automatic, \$100. DA 4-3622. A  
 BOAT, 12', Fiberglas, Glen L design, controls, Mercury Mark 20 engine, 4 life preservers, ski equipment, anchor, trailer, \$375. GR 7-3275. A  
 LAWN EDGER, Desert Ray electric, DA 6-5566. A  
 DRYER, 1958 Kenmore gas, \$200. OS 6-1888. A  
 MERCURY, 1950 4-dr, \$225. PL 6-1898. A  
 DOG HOUSE, well-bilt, \$6. DA 9-1518. A  
 MOTOR BIKE, Wizzer, roller-bearing crankshaft, hi-compression head, knob-by tires, \$55. PL 6-0684. A  
 JEEP, 1944, tow bar, new paint, \$495. OS 6-8860. A  
 PLYMOUTH, 1951 sedan, \$150. NE 6-6105. A  
 RANGE, Frigidaire electric, double oven, cost \$375, \$60. OS 5-4785. A  
 JEWELRY, woman's watch, 17-jewel, \$20; man's watch, Hamilton 17-jewel; man's ring, 14-carat, \$12. OS 5-1423. A  
 ENCYCLOPEDIA, American Peoples, w/mahogany bookcase-coffee table, \$225. Box 1815. A  
 OLDSMOBILE, 1953 98 hardtop, power equipment, extras, equity \$800. FR 6-6239. A  
 BOAT, 13', glassed, windshield, controls, Scott-Atwater 5-hp engine w/reverse gear & separate gas tank, alum. trailer, \$800. Box 1816. A  
 CORNER TABLE, maple, \$15. FR 6-5626. A  
 HOUSE, 3-bdrm, den, 2 baths, Lakewood Plaza, block fence, built-ins, weather stripping, 2-car garage, landscaped, \$16,690. GE 1-0038. A  
 HOUSE, 2-bdrm, Manhattan Beach, near ocean, corner lot, fireplace, sun deck, w/w carpeting, near stores & buses, \$11,000. FR 4-8757. A  
 FURNITURE, sleeper divan, innerspring mattress, \$65; box springs & mattress, double-size, \$20; chair, \$5. FR 4-4721. A  
 HI-FI EQUIPMENT, pre-amplifier, Fisher 50C, new tubes, \$45. FR 9-8500. A  
 CRIB, Kantwet mattress, \$20. FR 5-8550. A  
 BOWLING EQUIPMENT, Ebonite ball, men's size 9 shoes, bowling bag, \$12. FA 8-1944. A  
 HOUSE, 2-bdrm, Torrance, patio, fenced yard, down \$3500, \$13,500. FA 8-1822. A  
 TRAILER, teardrop-type, butane stove, ice box, \$300. DA 4-4750. A  
 MERCURY, 1946 convertible, modified 59A block, \$165. Box 1802. A  
 LOT, Edwards Estates, \$1495. PL 4-7891. A  
 MOVIE CAMERA, Revere B61 8-mm, magazine-type, f:2.5, fixed focus, \$45. DA 9-5016. A  
 GYM MEMBERSHIP, Silhouette lifetime, \$75. OR 4-1847. A  
 PARAKEETS, 2, blue, green, w/black & copper birdcage, cost \$30, \$15. Box 1817. A  
 FLUTE, Gretch C, new pads. Box 1818. A  
 GHIA-VOLKSWAGEN, 1957, metallic blue, extras, \$2500. OS 6-6108. A  
 BOAT, 17', inboard, trailer, \$450. PL 4-7628. A  
 FORD, 1956 4-dr Custom, 2-tone, Fordomatic, \$1300. DU 9-6775. A  
 TABLES, 4 matching, mahogany, Greek scroll design, occasional-type, coffee-type, 2 end tables, sell separately or \$60. OR 7-8386. A  
 GUNS, rifle, Winchester 70, .30-06, 4X scope, \$155; rifle, Springfield Sporter, .30-06, custom stock, \$80; rifle, Winchester 88, .308, \$100; pistol, frontier-type .38, holster & belt, \$70. GL 4-2572. A  
 CAMERA, Zeiss-Ikon Contina 35-mm, Norar f:3.5, range-finder, double exposure prevention, delay timer, case, \$38. FR 4-6003. A  
 MOTORCYCLE, 1956 Triumph Tiger Cub 200-cc, \$260. OR 2-7074. A  
 DODGE, 1947 4-dr, \$129.50. FR 5-5298. A  
 HOUSE, 3-bdrm stucco, west Torrance, fenced, view, landscaped, w/w carpeting, near schools, churches & markets, terms, \$11,000. LI 4-3596. A  
 AIR-CONDITIONER, 1956 G.E. Slimline 1-ton, air purifier, \$125. TO 1-6238. A  
 PLYMOUTH, 1951 Concord 2-dr slant-back, leatherette interior, FR 9-9616. A

## WANTED TO BUY

METAL TURNING LATHE, 9"-10", 3'-5' bed length, FR 2-8994. B  
 SHOP EQUIPMENT. FR 4-0838. B  
 GOLF CLUBS, VE 9-9034. B  
 SKI BOOTS, 2 pr, man's size 10 1/2, child's size 2. FR 5-4763. B  
 GUN, S&W .357 or Magnum .44. FR 4-4140. B  
 SUITCASES, PL 7-2719. B  
 DUPLICATING EQUIPMENT, Box 1801. B  
 SKIN DIVING EQUIPMENT, regulator, 60-min or 80-min single tank. Box 1814. B

## FREE (to be given away)

MAGAZINES, Time & Newsweek back issues. FR 9-9616. B

## RENTALS OFFERED

APARTMENT, furnished, lower, good closet space, patio, garage, FR 5-4118. E  
 CABIN, Green Valley, mile from lake, altitude 7000', sleeps 10, 2-story, fireplace, \$60 wk. FR 4-3945. E

## RENTALS OFFERED

APARTMENT, 3-bdrm, unfurnished, near beach, garage, hardwood floors, fenced yard, lease, \$88 mo. FR 2-9061. E  
 APARTMENTS, 1- & 2-bdrm, unfurnished, 1 1/2 blocks to beach, w/w carpeting, garage, patio, laundry, storage, TV antenna, disposal, adults, no pets, lease, water paid, from \$80 mo. FR 9-9586. E  
 APARTMENT, 1-bdrm, unfurnished, swimming pool, w/w carpeting, near Northrop. OR 7-4206. E  
 APARTMENT, 1-bdrm, unfurnished, Lawndale, disposal, fenced yard, near Alondra Park, child OK, \$65 mo. OS 5-6285. E  
 CABIN, Green Valley Lake, sleeps 10, \$25 wk. DA 4-3217. E  
 CABIN, 4-bdrm, 2 baths, Idyllwild, view, \$50 wk. FR 5-5025. E  
 HOUSE, 2-bdrm. DA 9-5816. E  
 HOUSE, 3-bdrm ranch-type, 2 baths, Palos Verdes, \$165 mo. FR 5-5446. E  
 HOUSE, 1-bdrm, partly furnished, \$65 mo. FR 4-2560. E  
 APARTMENT, 2-bdrm, unfurnished, TV jack, disposal, carport, \$85 mo. TE 1-2973. E  
 HOUSE, 2-bdrm, Torrance, fenced yard, near school & shopping. TE 5-1787. E  
 ROOM, furnished, kitchen privileges, \$12 wk. OS 6-3326. E  
 APARTMENTS, 1- & 2-bdrm, TV aerial, phone jack, disposal, w/w carpeting, knotty pine kitchen, parking, stove & refrigerator optional, adults, near Northrop, \$70-\$85 & \$110 mo. OR 1-5358. E  
 APARTMENT, 2-bdrm, unfurnished, Lennox, \$85 mo. TE 1-2973. E  
 APARTMENTS, 1-bdrm, carport, disposal, w/w carpeting, knotty pine kitchen, TV & washer jacks, near Northrop, water paid, \$80-\$100 mo. DA 4-8569. E  
 HOUSE, 1-bdrm, partly furnished, \$65 mo. FR 4-2560. E  
 APARTMENT, 1-bdrm, unfurnished, disposal, garage, child OK, near Northrop, \$75 mo. OS 5-8335. E  
 APARTMENT, 3-rm, partly furnished, near Northrop, water paid, \$65 mo. OR 1-8475. E  
 APARTMENTS, 1- & 2-bdrm, unfurnished, near school & Northrop, children OK, \$77.50 & \$95 mo. OR 7-4021. E  
 HOUSE, 3-bdrm, 1 1/2 baths, furnished, 1 mile from beach, corner lot, 2-car garage, \$185 mo. FR 6-6239. E  
 CABIN, Crestline, furnished, sleeps 13 or more, \$15 day, \$75 wk. OS 6-6074. E  
 APARTMENT, 1-bdrm, unfurnished, hardwood floors, disposal, service porch, garage, \$72 mo. HA 9-7950. E

## RENTALS WANTED

HOUSE, 2- or 3-bdrm, unfurnished, fenced yard, 2-car garage, 3 adults, approx. \$90 mo. FA 8-0980. R  
 HOUSE, 2-bdrm, fenced yard, between Northrop & El Camino J.C., couple w/baby & dog, max. \$85 mo. DA 3-1513. R

# More GMW —

## RIDES WANTED

8:00 a.m. — 4:45 p.m.  
 (Zone 2)  
 HUNTINGTON & EASTERN, Los Angeles. (Desire car pool; via Pasadena Frwy.) J. NIEMIROW (3245-55941, ext. 477). CA 5-0916. 5-2  
 (Zone 4)  
 IMPERIAL & ATLANTIC, South Gate. (Desire car pool.) ROBERT J. LANDERS (1400-54984, ext. 2641). LO 6-5773. 5-4  
 (Zone 9)  
 PRAIRIE & 174th ST., Torrance, MARCIE PADGETT (3760-55964, ext. 1478). DA 9-9595. 5-9  
 (Zone 12)  
 SUNSET & ALMAR, Pacific Palisades. RICHARD R. DODD (3543-45025, ext. 2460). GL 4-2451. 5-12  
 (Zone 13)  
 SEPULVEDA & JEFFERSON, Culver City. SY PICKER (3130-25074, ext. 1555). EX 8-0330. 5-13  
 (Zone 14)  
 CRENSHAW & 54th ST., Los Angeles. ALICIA SHAYER (3235-33767, ext. 1350). AX 1-9464. 5-14  
 BUCKLER & FAIRVIEW, Inglewood. CAROLYN SCHAFER (1421-44035, ext. 691). OS 6-6865. 5-14  
 RIDES OFFERED  
 7:00 a.m. — 3:45 p.m.  
 (Zone 3)  
 VALLEY BLVD. & PASS AND COVINA ROAD, La Puente. (Desire car pool; via Valley Blvd., San Bernardino Frwy., Harbor Frwy.) LEROY DICK (7721-26691, ext. 2568). 12-3  
 (Zone 4)  
 PAINTER & LAMBERT, Whittier. (Via Imperial or Rosecrans.) ROBERT L. DEALY (6450-44690, ext. 2363). OX 6-8573. 12-4  
 (Zone 5)  
 BROOKHURST & ORANGETHORPE, Fullerton. L. J. GODDARD (5561-18899, ext. 1280). LA 5-8045. 12-5  
 (Zone 10)  
 PACIFIC & ARDMORE, Manhattan Beach. (Car pool desired.) E. T. HAMPTON (3413-30626, ext. 445). FR 9-4653. 12-10  
 (Zone 13)  
 CENTINELA & MARKET, Inglewood. PETE SAN ROMAN (5503-51919, ext. 2216). OR 1-5893. 12-13

## CHILD CARE OFFERED

BABYSITTING, your home, anytime. OS 6-3326. G

## FOUND

BRACELET, Australian coins. OR 2-7869. G

## PERSONALS

CONTACT WANTED w/person who dented rear fender of ivory & plum 1956 Chevrolet club coupe 3 weeks ago in parking area across Broadway from Engineering Test Lab. OS 6-8816. L  
 RIDE WANTED to New York June 10-15, 2 men, share driving & expenses. OR 2-2093. L  
 HANDYMAN WANTED to do odd jobs, Redondo Beach area. PL 9-6332. L  
 RIDE WANTED to Detroit, Chicago, or vicinity June 27-28, share driving & expenses. FR 8-2912. L  
 HEARTFELT THANKS to all my friends & working companions for their thoughtfulness and help during my wife's recent illness and passing on. ROSS LA LONDE.

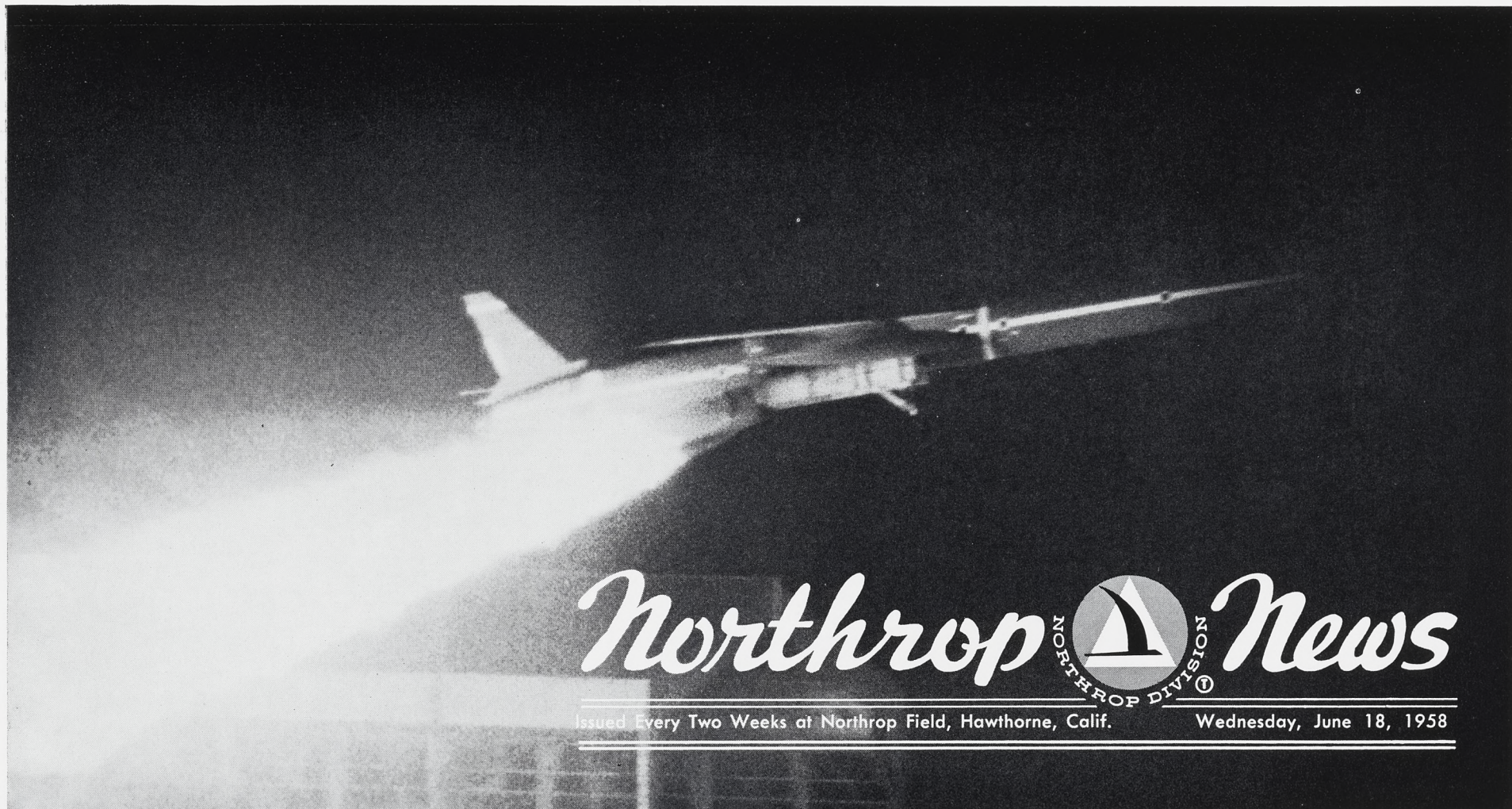
## FOR SALE OR TRADE

TRAIN EQUIPMENT, HO-gauge, engines, cars, cost \$385, sell or trade for 3-speed record changer, hi-fi equipment. Box 1804. M  
 BAR, mahogany, w/2 Nauqahyde stools, \$40 or trade for Mr. & Mrs. dresser or power mower. OS 6-4355. M  
 ENGLISH FORD, 1953 Zephyr 6-cyl. Box 1805. M  
 STUDEBAKER, 1953 V8, overdrive. OS 5-7924. M  
 CAR RADIO, 1957 Chevrolet, 6x9 speaker, rear antenna, lead, \$50 or trade. DA 3-7877. M  
 BOAT, 28', 102-hp converted Chrysler engine, bait tank, 2 bunks, \$1800 or trade for 18'-20' twin-outboard wide-beam boat. OR 4-9084. M  
 STUDEBAKER, 1953 Champion 4-dr, overdrive, \$475 or trade. OS 5-1502. M  
 PORSCHE, 1957 1600 coupe, black, red leather, sell equity or trade for 1955 Mercury or similar. OR 1-3900. M  
 PLYMOUTH, 1949 9-pass station wagon, \$110 or trade. Box 1802. M  
 CADILLAC, 1949 sedan, 1954 engine, new Hydramatic, \$425 or trade as down on Volkswagon. DA 3-2170. M  
 HOUSE TRAILER, Rollalong 18', sell or trade for smaller trailer. OS 6-1471. M  
 METAL LATHE, Craftsman 6", stand, motor, sell or trade for Eico 460K scope, Keystone K27 movie camera, 8-mm projector. Box 1808. M  
 GUNS, Colt .45 automatic, \$35; Luger P-38 9-mm, \$30; Winchester .22 Hornet, 6X scope, swivels; Russian Sporter, 7.62-mm, \$30 or trade for drill press, grinder, buffer or other guns. OS 5-9578. M  
 DODGE, 1940. Box 1813. M  
 SLIDE RULE, 10" Versaloo-loa, case, \$18 or trade. FA 8-7796. M

## RIDES OFFERED

7:30 a.m. — 4:15 p.m.  
 (Zone 5)  
 KNOTT & CRESCENT, Buena Park. (Established car pool.) JACK TRANT (5120-50170, ext. 1904). JA 7-0132. 13-5  
 (Zone 12)  
 VENICE BLVD. & INGLEWOOD BLVD., Culver City. (Consider car pool.) C. V. KIESEWETTER (2536-33276, ext. 2488). EX 8-5360. 13-12  
 8:00 a.m. — 4:45 p.m.  
 (Zone 1)  
 SANTA MONICA BLVD. & WESTERN, Hollywood. HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 15-1  
 WASHINGTON & UNION, Los Angeles. (Via Harbor Frwy.) O. H. CANO (3273-12887, ext. 1224). RI 8-1094. 15-1  
 (Zone 2)  
 HUNTINGTON & EASTERN, Los Angeles. (Desire car pool; via Pasadena Frwy.) J. NIEMIROW (3245-55941, ext. 477). CA 5-0916. 15-2  
 VAN NESS & 96th ST., Los Angeles. C. W. NEWLAND (3484-21133, ext. 1543). PL 5-1773. 15-2  
 (Zone 4)  
 IMPERIAL & ATLANTIC, South Gate. (Desire car pool.) ROBERT J. LANDERS (1400-54984, ext. 2641). LO 6-5773. 15-4  
 (Zone 9)  
 HAWTHORNE BLVD. & 195th ST., Torrance. A. AUTERA (3710-31624, ext. 1807). FR 9-6606. 15-9  
 MANHATTAN BEACH BLVD. & HAWTHORNE BLVD., Lawndale. A. L. WILLIAMS (2440-16419, ext. 1450). FR 9-2140. 15-9  
 (Zone 10)  
 HIGHLAND & 28th ST., Manhattan Beach. (Via Rosecrans.) H. W. JONES (3142-29647, ext. 2021). FR 4-1162. 15-10  
 (Zone 12)  
 SEPULVEDA & MANCHESTER, Westchester. CLYDE SHELLEY (3140-45979, ext. 745). OR 4-2267. 15-12  
 SUNSET & ALMAR, Pacific Palisades. RICHARD R. DODD (3543-45025, ext. 2460). GL 4-2451. 15-12  
 4:45 p.m. — 1:15 a.m.  
 (Zone 6)  
 COMPTON BLVD. & VERMONT, Gardena. VIC LINCOLN (2530-24884, ext. 2488).





# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, June 18, 1958

## Tower In The Plain (PART II, PAGE 2)

**ZERO PLUS AN INSTANT**—Snark is airborne. On her way to Ascension. Aircorper and cameramen were on Searchlight Row during launch. Burnout of bottles is next. They are jettisoned into the sea. No place for second class quality here. Highest reliability only can be accepted.

### NORTHROP

## NEWS BRIEFS

**INTERNAL AUDIT**—Dan H. Hill, Northrop treasurer, advises that Internal Auditing reporting policies followed by Northrop have reached the attention of the National Office of the Institute of Internal Auditors. "As a result, we have been selected as the representative in heavy industry in the Western District and the only representative from aircraft to supply the Institute with typical information covering our reporting practices and examples of our reports. These reports will be among those being prepared for inclusion in a study of internal auditing practices. Results of this study will be reported in book form internationally."

**APAC UNIT**—First systems containing APAC have been delivered to the Northrop Division by Nortronics, as part of the Accelerated Launch Capability program. Other units are scheduled for delivery beginning in July. They will be used in a flight test program to check out the APAC system . . . A proposal has been prepared to outfit follow-on missiles with APAC. APAC simplifies prelaunch operations and will further shorten the time necessary for countdown operations in the new Countdown facility . . . The unit was the first major design change on the Snark. It was tested in Nortronics' new dust-free systems test area in Plant Two.

**EAGLE MISSILE**—The Northrop Division has been invited by the Air Arm Division of Westinghouse Manufacturing Company to participate as an associate contractor in a proposal for the Eagle weapons system, it was announced by George F. Douglas, vice-president, Engineering. The Eagle is an advanced defensive system requirement for the U. S. Navy . . . Northrop will propose the design, development, testing and production of all elements of the air-to-air missile for this weapons system, except the Westinghouse guidance system and its associated ground equipment . . . This project enjoys a high priority with the Navy and contracts are expected to be let before the end of this year to the successful participants in the competition.

**COUNTDOWN FACILITY**—The first SM-62A missile for direct delivery to the Air Force is in the process of countdown operations in Northrop's newly completed million-dollar facility located west of Plant Three. "Facility operations establish missile reliability prior to delivery to the customer," stated Richard R. Nolan, Manufacturing vice-president. "Capability includes complete operation of the weapons system down through and including a captive launch . . . a duplication of site operations. The facility provides for missiles the equivalent of flight test for manned aircraft."

**T-38 PROGRESS**—The T-38 prototype No. 1 has entered the operational checkout stage. Stan Erbeck, T-38 project engineer stated that the aircraft has been removed from the work fixtures and located on its gear in order to make operational checks. The airplane will go to Flight Test about the middle of August.

## Northrop Drivmatics Set Records For Fuel-tight Boeing Jet Wings

Northrop's manufacturing capability was highlighted last week with the announcement that the Drivmatic riveting machine had

### NORCRAFTERS IN SUMMER SWIM AT LEUZINGER HI

Norcrafter adults will be able to cavort on both high and low diving boards. Mondays are family days—with the pool's four-foot end reserved for the younger ones.

The NRC has reserved the school's swimming pool for two months of Mondays and Wednesdays, 4:30 to 6:30. First plunges and dips are slated for June 30.

Each Wednesday afternoon Norcrafter adults will be able to cavort on both high and low diving boards. Mondays are family days—with the pool's four-foot end reserved for the younger ones.

Swimsuits and towels are required and, in addition, ladies must don bathing caps.

**DRIVMATIC** — Speed, precision and capability. From left, Roy Hopkins, Boeing Wing; George Elicker, Mechanical Maintenance; and Bob Jewett, Electrical Maintenance check wing riveting.

passed the 600 mark in wing panels riveted by remote tape control.

The Drivmatic, as modified by Ed DeVoss and John Hendel of Manufacturing Research and Development and Roy Hopkins, Boeing Wing, produces fuel-tight structures using headless rivets called slugs.

### LONG SERVICE MARKS ACCOUNTS PAYABLE FOLK

Accounts Payable folk will be tops in tenure this month.

Supervisor Ed Kinsey has announced that five Norcrafters in his group will receive 15-year pins for June. They are Grace McAtee, Wesley Carr, Mary Forde, May Harris and May Squires.

This will bring team total to eight out of 38.

Mr. Kinsey is a 15-year man. Others in the group are Ben Curran and Frieda Mooring. Frieda also has worked at Northrop longer than any other woman.

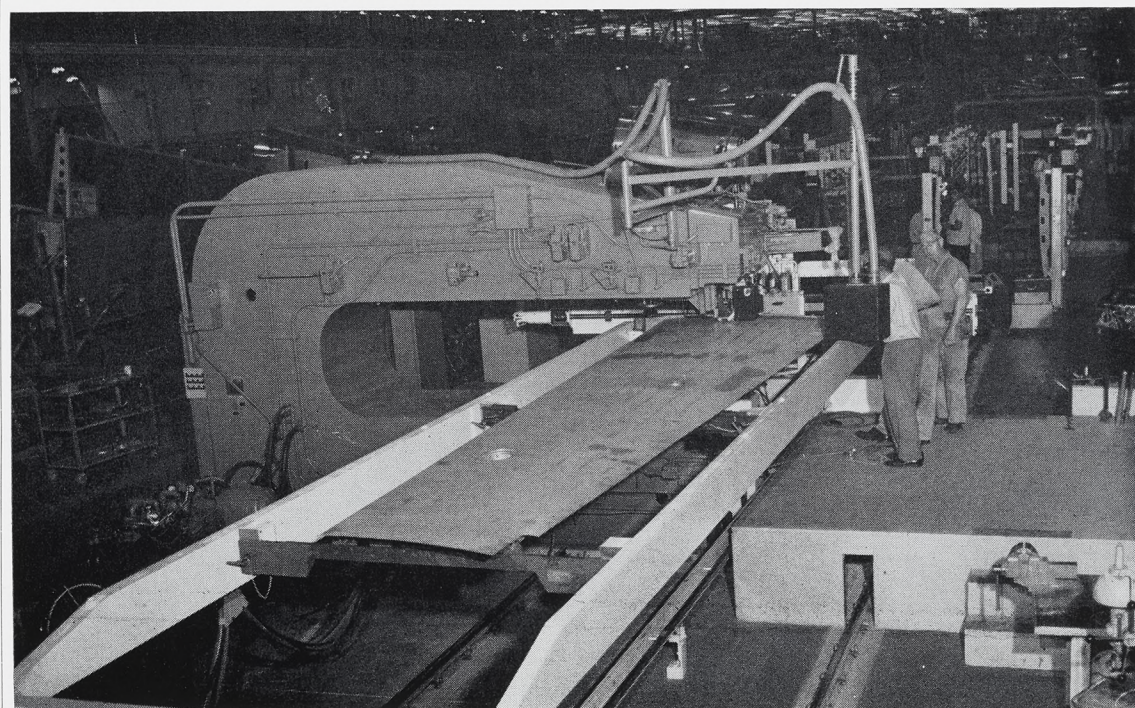
The Northrop Drivmatic is the first machine known to successfully manufacture fuel-tight riveted structures in this manner.

Northrop output capability, already a milestone in manufacturing records, was further enhanced as a second tape-controlled Drivmatic joined the original machine on the Boeing Wing line in Plant One. The 130-inch reach of the new riveter is also a record.

The Drivmatic is a remote tape-controlled riveter. It locates the wing panel in over 1600 locations automatically and has the ability to locate a rivet within plus or minus 10-thousandths (0.010) of an inch.

The new method of sleeveless slug riveting provides adequate fuel-tight rivets to pass the rigid Boeing fuel-sealing requirements.

Through the use of fuel-tight rivets, the wing serves as a fuel tank without the need for internal tanks or liners. The expense of producing separate tanks and the weight penalty for carrying them are eliminated; the fuel-carrying capacity is increased.





# SAC IN MISSILE AGE

**AIREPORTER WITNESSES SNARK LAUNCH—  
INTERVIEWS SAC MISSILEAIRMEN**

Patrick Air Force Base and Cape Canaveral have the Atlantic Ocean for a front yard. Their back yard is a river called the Banana River.

The people there live with the sea constantly. When the sea smiles, the weather smiles; when the sea frowns, the weather frowns; but the sea is Old Man Atlantic and you must be watchful of his moods. The weather is a woman and men don't seem to mind her tantrums. True, they duck their heads and ward off her blows when she decides to

## By AIREPORTER

throw a hurricane; but usually they laugh at the wind and the rain and, when the sun shines, they flex with comfort.

You see them drive their cars down on the beach. Children and dogs romp on the white coral sand. The men talk and smoke and watch to the north for this is where the missiles come from.

Pretty women bare their shoulders to the sun, their skin the color of fine leather. Their eyes are as blue as the sea. Their hair is burned yellow like taffy.

On the road the weekends are long. Much longer than two ordinary days.

But finally the weekend passes and it is Monday again.

## EARLY A.M.

"We will fire a Snark tonight. Zero is at 3:08 a.m."

"Did you say 3:08 a.m.?"

The Northrop boys—Milt Kuska, Ed Cates, Will Tebo and Mal Knott—in the Northrop hangar at Cape Canaveral grinned.

"Yes—3:08 a.m. And this is 8:08, Ascension time."

"This must be a plan of course."

"Oh yes—this launch time is set so that the major portion of the flight occurs during daylight hours — and it gets most of us home before mama gets up."

"Things seem to want to happen early in the morning on this trip—" said Aireporter. "By the way, where is your snow?"

**THE CAPE AT NIGHT**—Snark hangar is bright blue spot in the deeper blue of the Cape's golden night. It is warm and fine. A big moon shines. The Northrop pros and SAC's "students" move in the area like space men in a far-off space station. As countdown progresses, work stands are moved away—one by one—until the Snark stands alone and ready to go like a great celestial bird.

"How about that rain in California?"

And so went the conversation.

The Northrop offices in Hangar H look out over the missile launch sites to the southeast. You can't see the pads, but you can see the gantries for the IC-BMs and the IRBMs and the Jupiter-sputnik types.

"Where is Northrop's pad?"

"Those buildings by the lighthouse. Right at the lighthouse is Colonel Beck's Hangar C. Scotty Johnson and his tech rep gang are there. Our pad and our hangars are to the left — see those two buildings?"

The buildings were low on the

You wait for the Snark and you watch the lighthouse; then there is the Northrop site—a big Snark in a big hangar and alongside a hangar half-finished.

"That new one will be SAC's."

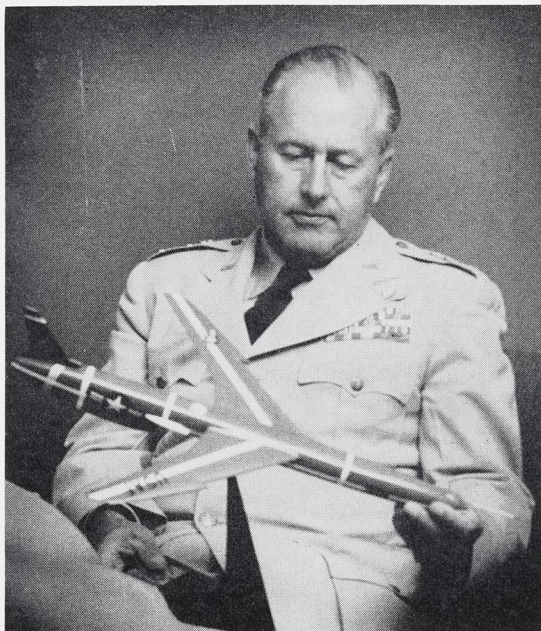
"Colonel Beck's boys will pre-launch out of there. Right now, they are putting their birds together in Hangar C."

## WITH PURPOSE

Aireporter saw Norcrafters working. It reminded him of Alamo-gordo, of Edwards, of Ontario. They worked as all Northrop experimental men do—without hurry, but with purpose. Men who are sure of their craftsmanship—the kind of sureness that only

## CINSAAC—

General Power studies model of Snark in his headquarters at Offutt Air Force Base, Omaha, Nebraska. Snark weapons system based on the hydrogen bomb will aid SAC's iron fist in defense of the free world.



horizon. The Cape brush hid them and the land was flat.

They loaded into a truck and started for the business end of things.

The gantries got closer, looming big and mysterious. Theodolite sighting stations were seen along the roadway.

"There's Jupiter C—over there is Bull Goose. There is Vanguard, Bomarc, Thor."

## SNARK COUNTRY

Names that you read in the newspapers. And the Cape and its establishments are far bigger than you had visualized.

comes with years of experience.

They wore white coveralls with "Northrop" across the shoulders.

The usual equipment common to missile testing was on hand. Air Force telemetering vans, mules, a jeep, tall stands.

On top of this big red bird five men clustered about the guidance system. They wore earphones and were very intent.

"The count is on now."

The pad was out and a short distance away from the hangar. Aireporter could see the concrete, white in the afternoon sun.

"What do they do?"

"They pull her out there and point her southeast and push the button."

"And she goes?"

"Brother—does she!"

"Is that the blockhouse?"

(See Page 3)



## Anxious To Push The Button



**MINUS NINETY**—The countdown thinks of everything, nothing is overlooked. Every launch man has his check-off points. SAC men Sergeant Don Russell and Captain Sapp listen intently to Tech Rep McFarlane. Relationship between factory men like Mac and Air Force users like Captain Sapp and Sergeant Russell is one of high respect and regard. Tech reps must know their weapons systems. No question can be left unanswered.



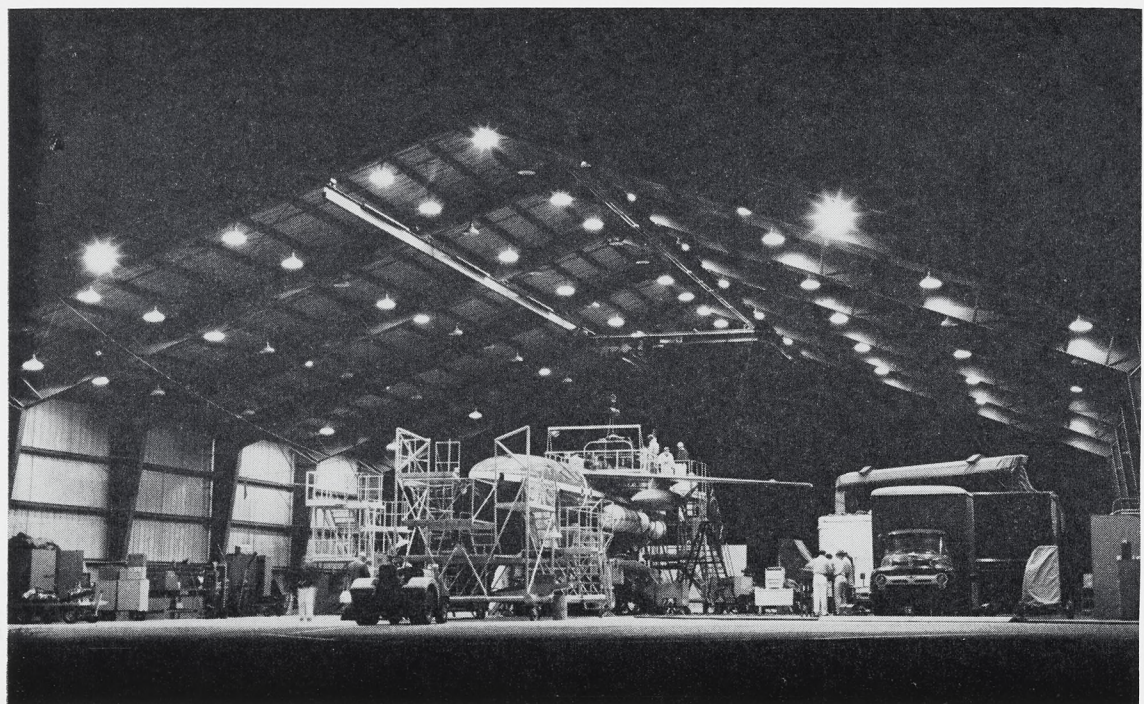
**LAUNCH** a missile? "Sure like to," SAC men in training tell Norcrafter Fred Cates, base administrator. The sergeants are from Colonel Beck's training squadron, were given special permission to watch a launch.

**SOAKING IT UP**—SAC men in training with Colonel Beck are on hand to watch a missile launch. From left, T/Sgt. Donald A. Russell, S/Sgt. William R. Heisler, and T/Sgt. Gerald J. Bonham. Staying up all night to watch a launch is beyond the call of duty and not a class requirement. "We want to learn," they said. "We'll stay as long as they let us. We keep strictly out of the way though."



**BIG BIRD**—The Snark is a rugged, reliable weapon. But you must know how she operates. SAC's Captain Sapp and Sergeant Bonham and Northrop Tech Rep McFarlane check an access point under the giant bird's belly. Time 2:30 a.m.

**NOSE TO TAIL** — Northrop Snark Tech Rep Jim McFarlane explains Snark electronics to SAC men Captain Sapp and Sergeant Gerald Bonham. Point of interest is d-c power supply near missile's vertical stabilizer.



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"Yes, that roof-like thing on the ground. A tunnel runs from there to the pad. The men who arm the booster go down that tunnel. She sits there all alone for five long minutes. It's more than a man can stand—waiting for it to go. It's okay when you can work on her. She belongs to you and you belong to her. But then you have to leave her. I don't know — but it's something like leaving your wife or your daughter to shift for herself for a while, or sending her on a long journey by herself. You are proud, though."

"Last man to leave is the inspector who checks the boosters and makes sure they are ready to fire."

Airporter and the photographer were shown the layout on the way to Hangar C.

"This is where the searchlights are positioned. Here is where the personnel go—those that aren't assigned to the blockhouse or on the pad at the last minute. And this is Hangar C."

#### HANGAR C

This was the eagle's nest. Here the fledgling missile-airmen would try their Snark wings. Here they would try their new battle knowledge. Weeks of theory and hypothetical hypotheses would crystallize into that magical moment when the great Snark blasted to a target so far away that during flight climates would change, countries would be crossed, lines of longitude and latitude would spin far below.

It was busy-quiet in the big high hangar. Two Snark missiles without wings rested on their work fixtures. Airmen were at work. On top. Underneath. In front. Behind. A man's legs stuck out here. An arm was visible there. GI caps. Stripes. O.D. coveralls.

"Are these school missiles?"

"Oh no—SAC will fire these. They will school on them all right, but then they will fire them."

"How do they like the Snark?"

"They like it good. Come on, let's go see Colonel Beck."

Colonel Beck — first Snark Squadron commander — recently promoted from Lieutenant Colonel to full, is a lean man and as sharp in purpose and direction as a supersonic bomber. He is tanned the color of a rifle scabbard by the everlasting suns of California and Florida.

The last time Airporter had seen him was at the graduation of the first missile school contingent at Northrop Field.

#### GRADUATION

The airmen graduates—called missileairmen — had received their diplomas under the shadow of a Snark in launch attitude.

Important people had spoken on missiles and the future of the birds.

On a raised platform behind a podium carrying the SAC shield, General Kalberer, deputy commander of the 15th Air Force, had told the graduates that they were men on the threshold of a new era. Whitley Collins, Northrop Aircraft's chain-reacting president, had been there. Big Bill Larrabee, Northrop's Corporate vice-president, had been there. Colonel Beck had presented the diplomas. Air Force band had played. The color guard had saluted America's proudest emblem—Old Glory.

Now the boys were at work in Hangar C at Cape Canaveral getting ready to put their schooling to the test.

Colonel Beck's office was on the sunny side of the hangar.

After handshakes the Colonel had praise for the training program.

#### TECH REPS AND ATC

"Thanks to Captain Bower and Captain Stokes and their ATC boys and to your tech reps, morale is very high. These men want to launch a missile."

"How about you, Colonel?"

He grinned. "I also want to launch a missile."

"Who wouldn't want to launch a missile?" said Northrop Tech Rep Jim McFarlane.

"Our men like to work under pressure," said Colonel Beck. "We would like more pressure, but in this kind of training—so comprehensive—we can't hurry the process. It is the transition from manned aircraft to missiles. Pushing the button on a missile is an absolute act. You have to know what you are doing. You have to be very careful and you have to be very right."

"We watch your people," he said. "Captain Sapp and Captain Butler will be over there tonight. There will also be three airmen watching all night."

"All night?"

"Until the launch."

"Is this an assignment — a duty?"

"No," he said. "They don't have to go. We don't send them. They go on their own—as many as can be there. We try to keep the numbers down. Don't want them interfering with the launch in any way."

"We'd like to get some pictures of them," said Airporter. "And I'd like to do a 'man-in-the-street' cross-section of the outfit with some of the boys here in the hangar. I would like to have you as one of these."

"I would like to decline," he said. "All the publicity has been my way. I wish you would use the men."

"Granted," said Airporter. "But how does it feel to be first CO of the first intercontinental missile outfit?"

#### FIRST SNARK CO

"It's a wonderful assignment," he said. "We look on the Snark as another important weapon in the SAC arsenal of deterrent force in being. I am happy to have this command. All my men are volunteers."

Before leaving, Airporter promised to print photos in the Northrop News of Colonel Beck's outstanding Airman of the Month —elected on the basis of workmanship and proficiency.

"We have 15 Snark models," he said. "This model is the award. I would appreciate it if you could use the photos of my men."

"The Northrop News would be happy to do this, Colonel."

It was late in the afternoon when the interview was over.

Airporter and photographer went back to the motel.

They would return to the Cape that night before midnight for the all-night session of the launch.

Airporter got two hours sleep. Outside there was a big Florida moon.

A missile launch is a large experience.

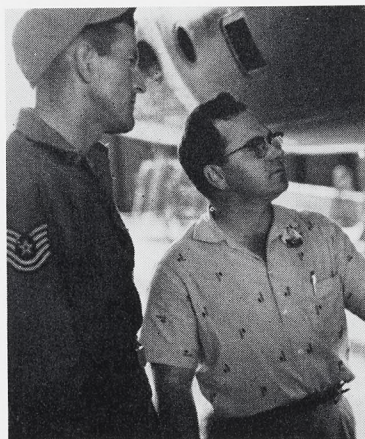
They drove back out to the Cape under the moonlight. They smelled the marmalade factory. It is at the first left-hand turn outside of Cocoa Beach. Ships could dock at the factory.

"That smell makes me hungry," said the photographer.

(Continued on Page 4)

## SAC Missileairmen Study Long Hours-- New Snark Base at Presque Isle Next

**Technical Sergeant W. E. Lewis, Nederland, Texas.** "Nederland is near Beaumont. I'm 34 years old and I've been in the service 14 years. Six with SAC. Yes, I'm a career man. I'm from powerplant maintenance on the B-47. I'm in powerplant on the Snark. I use the same know-



With Tech Rep Joe Kaiser

how with the SM-62 that I used on the '47. Missiles? The coming thing. Sure, I volunteered. It was a good duty. All the boys in my outfit wanted it. There were 200 of us and only one opening. I'm happy I got it. SAC—? I've been with SAC so long. I wouldn't know how to act in any other branch. And I would never change. When I retire—? Back to Texas, you know. I'm married, have a fine family—two boys and a little girl. The boys are four years and five months—the little girl is three years. I don't think I'll like Presque Isle. Don't like the cold. But my wife Ruth likes the cold, so we'll go. No, I won't leave them here for a while after we go. I'll take them right with me, first off. We'll take our chances with housing.

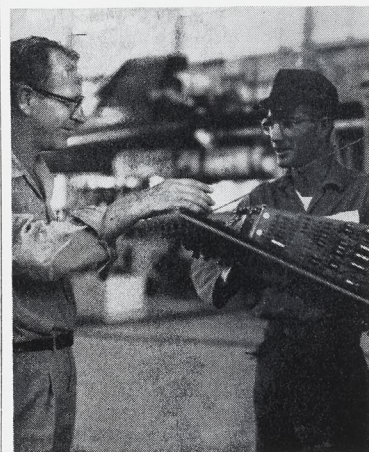
**T/Sgt. J. R. Fedie, Durand, Wisconsin.** "I'm 29 years old and I've been in SAC 11 years. This makes me a charter member of the best outfit in the Air Force. SAC gets you around. Been to Europe and to



With Tech Rep Bill Agar

the Caribbean. Not married and I like to get around. When this missile program started, of course I volunteered. It's like getting in on the ground floor of any good opportunity. I was a radar man with B-36s up at Rapid City, South Dakota, and this training is good background for the missile systems analysis work I'm doing on the Snark. This bird looks like it will really go. Anxious to fire one, but don't want to fire too soon. All of us want to be ready. Moving to Presque Isle? Fine with me. I like the north, like fishing, like hunting."

**A/2C Jim Abbett, Alexander City, Alabama.** "I'm 21 years old and I've been in the Air Force 2 1/2 years—all of it in SAC. The Snark—? It's fine training. A good career. If I stay in SAC I'll have top opportunities. If I leave SAC I can't miss in civilian life. Incidentally, out of 30 months in the service, 13 of those have been in training, in school. No, I don't mind working

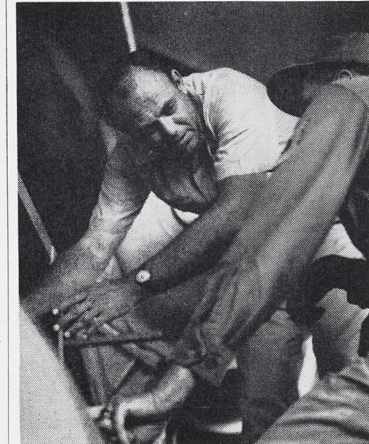


With Tech Rep Don Smith

on an unmanned weapon. Missiles are here to stay. I guess I will be a missile man from now on. Presque Isle—? I don't expect anything wonderful. They say when it's good it's wonderful and when it's bad it's terrible. SAC — why do I like SAC? — I like the way SAC does things. I'm just plain proud to be a SAC man. I'm single."

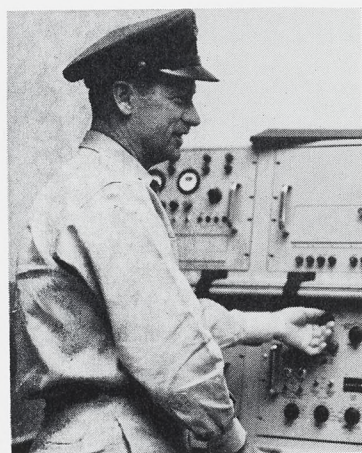
**Captain R. S. Dunbar, Charleston, South Carolina.**

"Shall we talk about SAC first? Fine. I've been in the Air Force 16 years and of course it's my career. And the best thing about my career is that it's in SAC. I was B-47 aircraft maintenance officer. Why do I like SAC? Well—SAC has a dedicated job to do. A clear cut mission. And we are on combat status at all times. Our job is to deter war and we do deter war. We do this every hour of the 24, every week of the month, every month of the year. Now for the Snark —there is a definite place in future warfare for unmanned bombers. They will do the same job as the manned bombers, without loss of life. I believe that the pilot attrition rate next time will be awful. Snark is not the ultimate weapon, but what



weapon has ever been? We've got the Snark and that is the main thing. Presque Isle—it might be too cold for comfort, but I've been in cold places before and it hasn't hurt me yet. Yes—I am married. Have one boy—R. S. junior, 10 years old. How are the SAC boys progressing? They're catching on fast. They're pushing the instructors.

**Warrant Officer Howard E. Palmer, San Jose, California.** "I'm an old-timer—17 years in the service, 8 years with SAC. My last assignment just before the Snark was at McDill Field—K systems on the B-47. Yes—I did train at Northrop Field in missile controls and



unit analyzers. Here, I am in charge of the test group. Yes, I certainly am a career man. Electronics. I'll always stay in electronics. And I will never leave SAC without a protest. Why—? They do things. When they say they will do a thing at a certain time, they do it. They get things done on time. SAC is important. I feel that SAC is doing something for the nation. I don't know about the other commands, but I do know about SAC. Missiles—? I am not ready to give an opinion. But I do feel that missiles won't change SAC. Things will be about the same. The Snark is another fine tool to get the job done. I am married and I have four children. Two boys and two girls. Presque Isle is okay with us. Been in Florida six years. Ready to go north. Taking my family when I go."

**A/1C Dick Driscoll, Ga-**

**lena, Maryland.** "I've been in SAC three of the four years I've been in the Air Force. I'm 21 years old. Actually, the Snark kept me in the Air Force.



I would have rotated out except for the missile program, but I'm signed up again now. This is going to be my career. I'll stay in SAC as long as they'll have me. Just like Fedie says—this is the ground floor on the newest thing in the Air Force. Space travel? Yes—I think this is the way we go. This is the way we start. I'm married and our first child is coming. We understand that housing might be a problem in Presque Isle, but we're not worried. SAC always takes care of its people. Yes, I volunteered. Could we get some pictures of the Snark?"

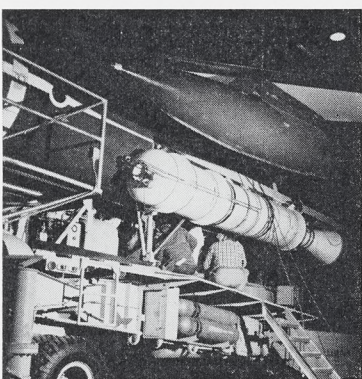




**WE WANT A BULL'S-EYE**—From left are AFMTC Captains George Williams and Chet Czepyha and Northrop's Milt Kuska, chief flight test engineer. Kuska, from Hawthorne this day on the airplane, is relaxed here, exchanges missile banter with the project officers in Snark blockhouse.

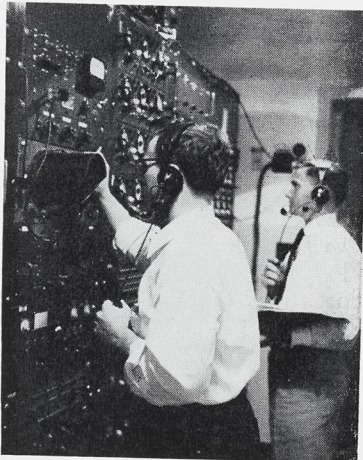
**THIS IS THE TIME**—Ascension Island is 5000 miles away. The Snark is ready. Weather is a mite bad. Shall we fire?

From left, men at the Cape: Milt Kuska, Ed Cates, base administrator; C. F. Harris, supervisor, Radio Control and Radar; W. J. Tebo, head of MTF Flight Test; W. A. Howard, general supervisor, Guidance and Controls; Lt. Col. E. O. Godfrey, chief, SM-62 Division, Directorate of Cruise Missile Tests AFMTC. Hawthorne has been on the line. Decision, heavy on Kuska's and Colonel Godfrey's shoulders, was to fire. And they did. It was a bull's-eye.



**NEAR READY**—Launching crew secure Snark belly doors during last stages of countdown. The big white cylinder is the port-side booster bottle. This one and its starboard-side buddy vault the Snark into the sky on legs of flame as the minus-zero button is pushed.

**ELECTRONIC WIZARDRY**—Norcrafters W. L. Kaelber, electronics technician, and R. H. Bleakley, associate engineer, monitor Snark instrumentation. These men must know their business, know what the Snark circuitry reads as the pre-launch countdown ticks off.



**READY TO GO**—Snark elevates to launch altitude by hydraulic jacks on ground handling equipment; truck is hooked on; and she leaves the hangar for the launch pad.



## Countdown Tension Mounts to Peak

They went through security, showed their badges with photographs to the Pan Am guards. They drove through the flatness of the Cape with the stunted brush on either hand. They stopped at the Northrop office and went through security again. Here the guard felt the badge.

In the office they picked up Charley Rodgers, RCA photographer assigned to them for the launch.

Norcrafters Mal Knott went with them out to the pad.

Again, driving through the moonlit night.

### MOONLIT CAPE

It reminded Aireporter of the oil fields in the San Joaquin Valley at night—the gantry lights spotted the ICBMs and the IRBMs, each missile's area was an island of pale light in the grey-golden expanse of the moonlit Cape.

And you could smell the sea, for the wind was pleasantly strong from the southeast. And then there was the searching sweep of the lighthouse beacon probing the horizons; and you noted that the moon paled the light and you wondered how it would look to a mariner far at sea.

They parked inside the pad area after clearing launch-site security.

"We will have to move that truck at approximately minus 120," said Knott. "It get pretty critical. Only the work vehicles are permitted inside after that time."

The hangar lights were blue-bright in the moonlight.

The white coveralls the men wore picked up some of the blue. "It looks like a space station."

They stood and looked. It was a scene of urgency and haste, but haste that was orderly. The great red bird nestled on the yellow launcher while the men worked.

The inflexible countdown charged the air with expectancy.

The earth would turn and time would pass and the countdown would march resolutely and inflexibly toward zero.

"What is the count?"

"Minus 200. She won't go before 3:14 and the latest she'll go is 4:11."

### A VISUAL

"Do they ever get a visual?"

"It depends on the weather."

For a long time no one got a visual. Then the captain of one picket ship got a visual. And, on the last flight, all the captains of all the picket ships got visuals.

They backed out of the no-smoking area, denoted by a great yellow circle painted around the Snark and her launcher. They lit cigarettes.

"The coffee wagon is here—would you like a cup of coffee?"

"Fine."

"It is a big help on these long nights. The coffee wagon."

"Okay—don't mind if I do."

They went to the wagon and ordered coffee.

It was 11 o'clock.

The moon was straight overhead.

### THE SAC MEN

The three SAC airmen were very careful to stay out of the way of the Northrop crew. They sat quietly all evening, stationed directly in back of the NAI test engineer. They each had headphones on and they were plugged into the circuits to hear the countdown and to hear all else—all that went on and they saw all that went on.

They were in high spirits.

They were Technical Sergeants Jerry Bonham of Metropolis, Illi-

nois, and a SAC man for eight years; and Don Russell of Ida Grove, Iowa—SAC for nine years. The third man was Staff Sergeant Bill Heisler of Wetumpka, Alabama—10 years a SAC man.

"We're studying to be systems analysts," said Sergeant Bonham.

"Tell me about this assignment?"

"We're in the learningest outfit in the Air Force. And we'll be launching one of these birds pretty soon."

"This is your own idea—to come down here and stay all night?"

"That's right, but we volunteered to learn the Snark and this is one way to do it. Stay here and soak it up," they said. "We like this. We like to watch these Northrop pros do a job."

They sat with headphones on, listening to the countdown.

The big red Snark gleamed under the fluorescent lights.

The wind had died.

The Florida moon had climbed and was leaning into the western sky.

### THE BLOCKHOUSE

"Let's go inside the blockhouse."

Through double doors and on inside was the familiar scene that Aireporter had first witnessed during the early stages of the development at Alamogordo.

The panels of electronics—lights of all colors. Atomic oxygen newly made—in the form of O and not yet O<sub>2</sub>—was released as the hundreds of instruments registered the electronic story of the Snark. Scanning screens where green-blue impulses endlessly traced the constant sampling of the Snark's instrumentation.

The blockhouse was a scene of incredible activity—men and instruments.

There was the communications command panel where orders were clearly announced and where two clocks advanced the irrevocable march of time—the solar clock that told you the hour of night—and the countdown clock that flipped away the seconds, draining time away as inflexible as the movement of the stars.

### BULLPEN

There was the guidance bullpen where the engineers escorted the Snark through her preparations for the long trip to Ascension.

They grinned.

They grinned in the way that men say hello when wearing earphones—with the eyes and the lips—conversation being impossible with the input coming over the system from the business of the launch.

A wave of the hand, a sort of civilian salute.

A red clock on the wall, a slave to the master timekeeping circuit, said minus 180.

At the launch director's station, SAC Captains Glenn E. Sapp and Arnold Butler stood by Frank Drury.

These men were in their absolute prime physically. The mark of command and of being used to command was stamped deep in their features. Their uniforms were pressed razor-sharp.

### WON'T TRADE JOBS

"Yes," said Captain Sapp, "we'll be launch officers when we go on our own. Got to know what makes this bird tick."

"Are you learning it?"

The strobe lights of the cameras were hot on their faces.

"For publication," said Captain Butler, "I wouldn't swap my job for any other job in the Air Force."

Aireporter wrote that down.

The strobe lights went off. Lou and Charley, RCA photographer from Colonel Spear's ARDC office, were satisfied.

They smiled.

"For a non-flying officer, missiles are the thing," said Captain Butler. "The only place a man can go in the missile business is forward and up—if he doesn't goof."

While the action in the blockhouse swirled around and about and the revolutions of time and tape tucked the seconds away one by one, Aireporter took biographical notes on the two SAC Snark men.

Captain Sapp was from Yuba City, California. A man in his middle thirties with 15 years in the Air Force—three and a half years of the 15 were spent on assignment to the French Air Ministry in Paris—staff Armament and Electronics. Married and with two children.

"Presque Isle?"

### PRESQUE ISLE OKAY

Captain Sapp shrugged. "Military life is all places in the world. Presque Isle is okay for us."

Captain Butler was from Elgin, Illinois, 38 years old and a 16-year military man—some of that in the Army. An Okinawa man, then to ATC and now SAC.

Captain Butler—a fiercely loyal man.

"SAC," he said, "is the only military outfit in the Air Force."

"Omaha will be happy to read this," said Aireporter.

A great voice from command communications boomed—

"Attention all personnel. Please clear the area for range safety destruct package and booster igniter installation."

Outside the moon was increasing its lead to the west. The Florida night was still fine. Aireporter guessed that Florida nights were the finest in the world anywhere.

How do you describe the scene



# The Snark is Launched-- Hits Ascension Target

in a blockhouse? How do you tell people about it so they know it and feel it and smell it and live the tenseness of it?

Start with the basic parts.

## LAUNCH SCARS

A blockhouse is made of reinforced concrete. It is below the surface of the ground and is therefore air-conditioned. You can see outside by a system of mirrors, prism style. This is a good idea. The top of the Northrop blockhouse at the Cape bears scars from flying concrete ripped from the 12-inch-thick pad during the launches.

"But the blockhouse is no place for a visual of Snark launch. All you see is dust and flame and smoke."

"The best place is photographer's row."

"Where is that?"

"Over by those searchlights."

Aireporter looked. Six high-powered Hollywood-premiere-type searchlights had moved in and were stationed not far away to the right.

"That's where we will see it go. Unless you'd rather see it from the blockhouse."

"I want to see it all," said Aireporter.

"Over there then."

## NERVE CENTER

The complexities of a blockhouse thunder with uncomprehension for the uninformed.

From a nerve-center pilot's seat where a man can sit and watch the bird much as an airline pilot stands by his Connie or DC-7B under automatic pilot, the blockhouse affairs of the

Snark spread out in all directions.

From the electronic panels and television screens, intelligence is received. Weather, temperatures, pressures, winds. The countdown checks on the guidance, fuel, engine condition. The target.

Hawthorne is on the line with input and take-out. ARDC people are there. Sandia, RCA.

There is a Pan Am guard at the door. He has a list of names. He checks the list.

The blockhouse is sealed from the outside world. How does a blockhouse look?

It is panel after panel of test equipment, centered about the pilot's seat. But up in front at the prisms mirrors, the launch officer sits on a high stool. He has a button under his forefinger.

## PUSH THE BUTTON

"When that button is pushed—we go," said someone.

Switches, twinkling lights, dials, handles, knobs, microphones.

There is heat in a blockhouse—and smell. And the heat is not a hot heat, but the heat of unseen electric echoes in the air. A radar beam can make a man sweat mysteriously. This is the heat. It is an inside-out heat. And the smell is the oxygen—nascent oxygen—that pilots know and like.

And there is the smell of warm tape—tape that you wrap electrical connections with.

A blockhouse is a crowded but organized place.

As with the hangar, the blockhouse is a place of urgency and haste, but no waste. Each man knows his job. People keep out of each other's way.

The two SAC launch control officers sat at the launch control panel watching Drury intently and listening to the communications. They stayed there without moving all night.

As the count progressed, all personnel except guidance men were instructed to keep hands off the missile while the astromachinery was put through its special countdown sequence.

"It is important that everybody stay off the bird when they are making these checks. Funny thing. At first when this check call went out, most of the men got off the missile, but always somebody had one more thing to do. This cannot be. During calibration that bird has to be still. Not the slightest tremor."

"The engineers had to call everybody together and show them the charts and the weird outputs that even putting your finger on the bird would cause during this short period of guidance calibration."

## ACCURACY

"This has to be done to get accuracy."

"SAC will calibrate at the last station in the sequence hangars. When a war missile is fired they put the information in that they want her to fly by and touch her off."

"She might just blast off right out of an expendable hangar. Part of the SAC squadron activity will be a continuous round of routine, of sequencing."

"Once a period the squadrons will come down here and really fire one. A race horse has got

to race. A boxer has got to fight to be any good.

"This will be a big deal—coming down here to fire. It will probably be like Yuma. The boys will fire them all and see who and what missile gets the most kills."

"We are going up to Presque Isle after this launch to take a look at what the base will be," said Aireporter.

It was 2 a.m.

## ABOUT READY

As the countdown wore on, the missile began to look cleaner. Gradually the stands were pulled away, one by one. Tension built up.

Aireporter noticed a man on a tall ladder securing a door near the tail.

A team of men were in under the missile's belly and between the great boosters.

"Buttoning up."

It was suddenly minus 40.

The Snark had become a clean, beautiful thing. Stands, cables, hoists had all been pulled away.

Her nose raised slowly—like a giant rifle aiming.

A 2-ton truck flanked by a jeep towed the Snark from the hangar out into the moonlight and headed toward the launch pad.

"Let's go," said Carl Lofback.

"Come on—let's get out of here." Angry moonlight was suddenly red-reflected from the long flanks of the Snark.

From camera row the searchlights painted the picture.

About the bird, a handful of men in white Northrop coveralls did their last countdown duties. They looked small out there in the night.

"This is a new hop they are

doing—a new type artilleryman's hop, only it's missiles."

"Look at them go—"

There were fewer men.

They disappeared. One by one.

"They leave by the tunnel."

"Only two left now."

"They're gone."

"She's alone now."

"They've armed the boosters and they're running back underground for the blockhouse."

She's alone."

"Good flight, Snark."

"She's about to go!"

"Minus 9, minus 8, minus 7, minus 6, minus 5, minus 4, minus 3, minus 2, minus 1, zero."

The voice thundered.

The searchlights faded.

## ORANGE FLAME

A great orange flash from the boosters and then the roar. A roar that seemed to come from your chest.

The Snark was in flight. It stood on two legs of white flame and in an instant was gone.

The red eye of the tail pipe and that was all.

The Cape was on fire.

Aireporter and Lou Meyer got to bed at dawn.

But many missile men were on duty and would stay on duty during the 5000-mile strike. Kuska, Cates, Tebo, Claggett, Colonel Godfrey, and many others. Reports of the flight, mile on mile, would be communicated to Hawthorne and the Snark Weapons System Project office in Dayton.

Aireporter and Lou Meyer left that afternoon for Westover and Eighth Air Force headquarters.

They didn't hear until they got home—10 days later—that the strike was a success.

(To be concluded next week)

## NRC Good Time Table—July

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, extension 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

### ARCHERY (days), Jack Duer

Meet Wednesdays, 6:30 p.m. Archery classes now in session.

### ARCHERY (nights), Paul Randolph

Meet Wednesdays, 12:15 p.m.

### ART CLUB (days), Forrest Ayst

Meet in Annex Thursdays, 7 p.m. Models furnished by NRC. Sculpture classes Wednesdays, 7:30 p.m.

### ASTRONOMY (days), Jim Stowe

Meet 2nd & 4th Mondays, 7:30 p.m.

### BIBLE STUDY, Roy Stahl

Plant I—Daily, 11:30-12:15, Tool Design Bldg; 11-11:45, 5566 Conf. Room, Plant II—Mondays & Thursdays, 12-12:45, Conf. Room 2. Eng. Center—Daily, 12-12:45, Reliability Conf. Room. Torrance—Tuesdays, 12:15-1, Bldg K2 Conf. Room.

### BOAT CLUB, Fred Wheeler

Meet 1st Wednesdays, 7:30 p.m. Night shift meets 3rd Thursdays, 2:30 p.m. Water Ski Club (days) meets 3rd Thursdays, 7:30 p.m.

### BOWLING (days), Lloyd Forstrom

BOWLING (nights), Charlie George

Summer leagues now in progress.

### BOY SCOUTS, Stan Morris

Sea Scouts, Intermediates, Cub Scouts. All Norcrafters boys welcome.

### CAMERA CLUB (days), Fred Armstrong

Meet 1st, 3rd & 5th Wednesdays, 7:30 p.m.

### CAMERA CLUB (nights), John Newman

Meet 1st & 3rd Saturdays.

### CAMPING CLUB, Fred Brant

Meet 1st Mondays. Breakfast & camp-out June 21, Matilija Lake.

### CHESS CLUB, Bill Henderson

Plant-wide playoffs now in progress.

### FISHING

Boat chartered for July 19—limited number. Make reservations at Personnel Activities.

### GEM & MINERAL CLUB (days), Raymond Cole

Meet Thursdays, 7-9 p.m. New 15-week mineralogy class starts June 19.

### GEM & MINERAL CLUB (nights), Victor Lincoln

Meet 1st & 3rd Wednesdays, 1 p.m.

### GOLF (days), Ted Deguise

GOLF (nights), Leo Baker

Northrop Open July 20, 27, August 3, Alondra & Western Avenue Country Clubs.

### GUN CLUB (days), Carl Turner

Meet 3rd Wednesdays, 7:30 p.m. Pistol shoot at Torrance July 13, 2 p.m. Rifle shoot at Torrance July 27, 1 p.m.

### MIXED CHORUS, Bert Bracher

Meet Tuesdays, 7:30 p.m. All Norcrafters welcome.

### MODEL RAILROAD, Jack Wilson

Meet in Annex Tuesdays, 7-10 p.m. Visitors welcome. Need electricians, carpenters & scenic artists to help with new layout.

### PHILATELIC CLUB, Eugene Richardson

Meet 2nd & 4th Mondays, 7 p.m. Coin collectors welcome. Coin display July 14.

### RADIO CLUB (days), Andy Dolak

Meet in Annex last Thursdays, 7:30 p.m. Radio code class meets Wednesdays, 7:30 p.m. NRC's station is W6VPZ.

### RADIO CLUB (nights), Merwin McGrew

Meet last Thursdays, 1:30 p.m.

### SKEET CLUB, Dan Kawashima

Meet alternate Saturdays at Long Beach Dominguez Gun Club on Artesia Blvd. July 6 & 20, 10:30 a.m.

### SKI CLUB, Chuck Morse

Meet 2nd Wednesdays, 7:30 p.m.

### SKIN DIVING (days), Ralph Gonzales

Meet 3rd Mondays, 7:30 p.m.

### SKIN DIVING (nights), Lillian Kemble

Meet 3rd Wednesdays, 1 p.m.

### SOFTBALL (days), Ken Klier

League play Mondays & Fridays at Sportsman's Park; Wednesdays at Rosecrans; 6 p.m.

### SPORTS CAR CLUB, Jack Kirkpatrick

Meet 2nd Thursdays, 7:30 p.m. Annual Breakfast Rally June 22.

### SQUARE DANCING, Roy Jackson

Meet 1st, 2nd & 4th Sundays, 8 p.m. Beginners class 2nd, 3rd & 4th Sundays at Gardena Barn, 15016 Daphne, 3-6 p.m.

### SURF FISHING, John Pawlicki

Meet 1st Tuesdays, 7:30 p.m.

### SWIMMING

Mondays & Wednesdays at Leuzinger Hi pool, 4-6:30 p.m., starting June 30.

### TABLE TENNIS, John Burke

Leagues forming Mondays & Wednesdays, 4-6:30 p.m.

### TOASTMASTERS 212 (days), John Walker

Meet at Western Avenue Country Club Thursdays, 6:30 p.m.

### TOASTMASTERS 1398 (nights), Sam Grutis

Meet at Western Avenue Country Club.

### TOASTMASTERS 2583 (days), Howard Cornelius

Meet at Western Avenue Country Club Mondays, 6:15 p.m.

## FOR THE LADIES

### BOWLING (days), Joan Sitauer

BOWLING (nights) Mary Minnaugh

Summer leagues now in progress.

### GIRL SCOUTS, Dallas Vasquez

Mariners, Intermediates, Brownies. All Norcrafters girls welcome.

### SOFTBALL, Betty Rice

Practice games at St. Andrews Park Tuesdays, 6 p.m.

### TOASTMISTRESS, Vicki White

Meet in NRC Clubhouse Board Room 1st & 3rd Thursdays, 7 p.m.

## Golfers Vie For Northrop Open Laurels

Driving down the fairway and, if need be, chip-shooting out of the rough are the aims of the approximately 160 expected participants in the upcoming NRC Northrop Open.

Slated for the links of both the Alondra and the Western Avenue Country Clubs, the tournament dates are July 20 and 27 and August 3. Each budding Sneed will play both courses with a one-Sunday layoff.

Tramping from green to green will be five flights of foursomes, yet to be scheduled.

Tourney registrations are being handled by Personnel Activities, Plant One, extension 2784.

## NRC-sponsored Course Digs into Basic Mineralogy

A 15-week seminar delving into basic geology and mineralogy begins tomorrow evening at 7:30.

The NRC Clubhouse is home base for this college-level course which will include prospecting field trips.

Instructors will be Wally Ford, director of Life Sciences, El Camino Junior College, and his assistant, Bernard Pipkin, also of El Camino.

All Norcrafters, together with their families and friends, are invited to attend. Registration may be made at the NRC Clubhouse tomorrow, preceding the initial meeting.

## Sighting the Rainbow



## PING-PONGSTERS TAKE SIDES FOR LEAGUE CONTESTS

Artistes of the celluloid ball will league early in July. The teams will be formed of equally able competitors.

Play will be at the NRC Clubhouse Mondays and Wednesdays, 4-6:30 p.m.

Entry deadline is Thursday, June 26. Forms are available at Personnel Activities.

## TROUT TECHNIQUE

Pointing out the finer aspects of angling art is Bob Reed, general supervisor of Subcontract section, Contract Administration. Captain Les Phipps, Protection Service, is presenting the rod, an NRC award, for Reed's achievement—the landing of an 18-inch rainbow trout at the annual trek to Lake Crowley, near Bishop, by a Northrop supervision group.



# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box num-

ber replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

CAR PARTS, MG competition-type, Horne Sports dual manifold, Holly carbs. HO 5-1081. A  
FLUTE, Gretsch C, new pads. FR 9-9616. A  
TV SET, Hallicrafters 17" table model, \$25. PL 9-0694. A  
ENGINE, Martin 60 7.5-hp outboard, \$35. FR 4-0976. A  
BABY EQUIPMENT, play pen, \$5; car bed-seat, \$7.50; teeterbabe, \$1. PL 5-7521. A  
IRONER, Ironrite automatic. GL 4-2781. A  
MOWER, 14", catcher, hand edger, \$10. ST 9-2534. A  
WASHER, wringer-type, new rollers, \$35. OR 1-6043. A  
HOUSEHOLD FURNISHINGS, OS 5-9256. A  
DISHES, antique. GR 7-1539. A  
BUGGY-CAR BED, Welch, \$15. DA 4-6484. A  
CHICKENS, bantams, breeding stock, chicks, some fancy breeds. OS 6-5253 weekdays. A  
PUPPY, dachshund, 2-mo old brown male, AKC. OR 1-4853. A  
SOFA, Sealy Hide-a-bed, \$40. DA 3-3953. A  
APPLIANCES, range, Western Holly gas; refrigerator, Servel, new element; \$35 ea or \$60. HA 5-1030. A  
CAR PARTS, body, Jowett Jupiter alum. roadster-type; chassis, Henry J; engine, 1952 Studebaker V8. PL 5-6084. A  
EQUIPMENT RACK, 19"x6", \$15. OR 8-8326. A  
PUPPY, cocker, 5-mo old female, champ lineage, housebroken, trained, shots, AKC, w/metal bed. OR 2-4489. A  
TRAILER HITCH, Tour-Aid, \$45. OR 4-7018. A  
FURNITURE, sectional divan, studio couch, end table. PL 4-7410. A  
BED, twin-size, Sealy inner springs & mattress, frame. OS 6-9492. A  
DOG, cocker spaniel, 3-yr old, AKC, gentle, \$25. DA 3-7230. A  
RANGE, Gaffers & Sattler tabletop-type, \$35. OS 6-8842. A  
RUGS, 9'x15' shag, brown, \$10; 9'x12', print, \$30. OS 6-5033. A  
CHAIRS, Bell lounge-type, green & black, \$25; barrel-type, channel back, brown, \$10; barrel-type, gold, \$5. OS 5-1818. A  
CRIB, \$8. Box 1908. A  
RUG, 9'10"x12' wool, \$50. AX 4-5041. A  
BABY FURNITURE, Babyline, blonde, crib w/mattress, wardrobe. OR 2-2370. A  
MOWER, Penn 14", catcher, \$12.50. PL 5-8836. A  
SHOTGUN, Winchester 12 pump-type, 12-gage, Polychoke, rubber butt plate, case, shell vest, \$60. GR 9-6477. A  
RUG, 6'x7' beige wool. WE 5-6824. A  
DINETTE SET, 64"x34" table, chrome & yellow Formica, 6 chairs. EM 2-6401. A  
POWER MOWER, rotary-type, \$20. FR 8-1609. A  
PLAY PEN, maple, pad, \$15. FR 2-3827. A  
PLANTS, staehorn ferns, 3 medium, 1 large; rubber plant, large. ME 0-4086. A  
WIRE WHEELS, 5, 1953-1958 Cadillac. DA 3-5746. A  
CAMERA, Keystone 8-mm magazine-type, f:1.9. OS 6-9637. A  
SEWING MACHINE, Adler 152 portable, attachments. FR 4-6003. A  
FURNITURE, dining room set, blonde, table, 6 chairs, hutch, \$35; 2 Duncan Phyfe end tables, walnut coffee table, \$15; telephone bench, \$2. EX 9-2530. A  
BICYCLES, 2, imported touring-type, boy's & girl's 26", hand brakes, 3-speed shift, generator, lights, luggage racks, \$25 ea or \$40. FA 1-2284. A  
TELESCOPE MIRROR, 10" parabolized aluminized, overcoated. DA 3-7055. A  
DINING ROOM SET, walnut, modern, table, 6 chairs, china closet, \$50. DA 4-1593. A  
BICYCLE, 1957 Higgins boy's racina-type, 3-speed shift, new tires, \$20. FR 5-2758. A  
TRANSMITTER, Heathkit DX35, 65-watt input, crystal, instructions, \$50. LA 2-8173. A  
CAMERA, Arqus C3, 35-mm, flash, 100-mm telephoto lens, filters, sun shades, case. DA 9-7421. A  
PARROT, half-moon, 18-mo old, cage, \$30. GL 4-7770. A  
PUPS, Beagle, AKC, champ-sired. AX 1-9454. A  
TV SET, Zenith 17" table model, \$50. DA 3-1486. A  
LIVING ROOM SET, 3-pc, modern, couch, chair, ottoman, \$40. DA 4-6053. A  
MOWER, new gears, sharpened, \$10. FA 8-8899. A  
REEL, Mitchell fresh water spinning-type, extra spool, cost \$28, \$12. GR 9-3230. A  
RADIO, Motorola transistor-type, pocket-size, \$40. Box 1903. A

## FOR SALE

DRUM, metal snare-type, stand, \$20. Box 1910. A  
BABY FURNITURE, crib, Babyline, maple, w/Kantwet mattress, \$25; Babee Tenda, \$10. TE 3-9757. A  
SOFA, Nauqahyde 7', pink, \$50. OR 1-6661. A  
CAR COOLER, window-type, \$5. FR 8-1679. A  
PISTOL, H&R .22, \$25. FR 9-3128. A  
FURNITURE, maple; bed, single-size, \$15; buffet, \$25; Hollywood bed rack, metal, casters, \$5. AX 4-0727. A  
BED, double-size, mattress, box springs, \$60. OS 5-9740. A  
STOVE, Rheem Wedgwood Spic & Span tabletop-type, gas, 4-burner, stainless steel ariddle, oven, \$50. OS 6-3160. A  
ELECTRONIC EQUIPMENT, Heathkit; sig gen, SG8; vtm, V7A; capacitor checker, C3; \$59.95. UN 4-7560. A  
WOOD SANDER, vibrator-type, \$9. OS 6-6956. A  
TV CABINET, maple, storage space, for 27" set, \$40. PL 3-8758. A  
BABY EQUIPMENT, Stroll-O-Chair, convertible hi-chair, buggy, car bed-seat, table & chair, w/chrome fenders, canopy & basket, cost \$100. PL 1-7185. A  
SLIDE PROJECTOR, Mansfield 35-mm 500-watt, 13 Airoquip magazines, \$55. NO 4-5181. A  
TV SET, Motorola 17" table model, \$30. DA 3-4303. A  
FURNITURE, sectional, 4-pc; desk, blonde. TO 1-8886. A  
RUG, 9'x15' shag, green, \$7.50. Box 1904. A

## WANTED TO BUY

TRICYCLE. FR 5-7822. B  
CANOE, 14' minimum. FR 5-9790. B  
PIANO, old, w/parts & tuning tools. DA 9-2355. B  
RANCH SUPPLIES, 5'-6" disc, tractor, pipe & fittings. OS 6-5253 weekdays. B  
HOUSE, 2-bdrm, den, 1 1/2 baths, 2-car garage, GI resale. OR 7-6325. B  
LOT, large, on hill, bet. San Pedro & Manhattan Beach. OS 5-1566. B  
GUN, Stevens or Savage .22-410, cleaning kit, ammo. FA 1-2656. B  
DRYER, gas. OR 2-4301. B  
GUITAR FOOT PEDAL, Biasby. NE 1-9413. B  
TV SET, 21" table model. FR 9-3128. B  
SHOPSMITH, attachments. RI 8-1094. B  
MOTORCYCLE ENGINE, German Puch or Allstate 250-cc. OS 5-5943. B  
T-BIRD, 1955-1957. HO 4-7747. B

## FOR TRADE

MOVIE CAMERA, 16-mm, trade for metal lathe, shop equipment. Box 1907. C  
TYPEWRITER, Woodstock, trade for TV set or camera. FR 8-5001. C  
VIBRATOR CHAIR, Stratolounger, cost \$225, trade for Stauffer or Silhouette table. LA 6-4520. C

## FREE (to be given away)

KITTENS, 8-wk old, 2 black & white, 2 tiger-striped, 1 gray. OR 2-8629. D  
KITTENS, 3, black & white long-hair, 2-mo old. FR 6-3332. D

## RENTALS WANTED

HOUSE, 2-bdrm, unfurnished, garage, yard. OR 4-4088. F  
ROOM, separate w/bath, \$10 wk. OS 6-8512. F  
HOUSE, 3-bdrm, unfurnished, within 2 blocks of ocean, 2-car garage, lease. FR 9-9616. F

## CHILD CARE OFFERED

BABYSITTING, your home, anytime, Hawthorne area. OS 5-6285. G

## LOST

TOBACCO POUCH, brown leather, June 9 at NRC Clubhouse during Astronomy Club meeting. Box 1909. J

## PERSONALS

THANK YOU for thoughtful expressions of sympathy following the death of my father, RAY RENNIE. L

RIDERS WANTED for New York round trip July 12, share driving & expenses, double bed in car. VE 9-0448. L

## FOR SALE OR TRADE

WASHER, Bendix automatic tumbler-type, \$35 or trade for cement blocks or cement mixer. DA 6-5558. M  
TIRES, 4, 18x5.5 aircraft-type, 12-ply, tubes, bearings, wheels, axles, sell or trade for 12'-14' boat. OS 6-2435. M



## Tomorrow The Stars

### SCIENTIFIC CHALLENGE

The role that only they can play is translating today's imaginative dreams into useful reality was the topic of Lee A. Ohlinger's recent talk at the Narbonne High School Science Fair. Invited to be keynote speaker, the chief of Northrop's Computation and Datamation center told Lomita students their stake in the dynamic future of science. Mr. Ohlinger is a recognized authority in the fields of atomic energy and automation. His pioneering efforts include the basic engineering designs for the reactors at Hanford, Washington, where plutonium for atomic bombs is produced. He also served as consultant to the Atomic Energy Commission and to Oak Ridge Laboratories before coming to Northrop.

## SPACE LIMITS TO RESTRICT CLASSIFIED ADS

Space limitations have necessitated restricting BBSF classified ad insertions in the "For Sale" and "For Sale or Trade" categories, effective with the July 2 issue.

Henceforth the maximum price for each item advertised will be \$50. The asking price must be stated in the ad. The previous limitation of one item per advertiser per issue will remain in effect.

In addition, the "Rentals Offered" classification has been discontinued entirely.

All other categories will be unrestricted as to price. "Going My Way" ads are also unaffected.

To recapitulate BBSF ad requirements, advertisers must be Norcrafters. Ads must be submitted on Form 59-308, typewritten or printed, and signed by the advertiser. Each ad will run in one issue only. If the advertiser desires the ad repeated, he must resubmit it.

The above requirements are designed to contain the BBSF section within two columns. However, if for any particular issue the number of ads exceeds allotted space, only the earliest ads submitted will be used.

The deadline for ad insertion is Monday noon, nine days before publication.

## Buy Bonds



## RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
VAN NESS & 67th ST., Los Angeles (Consider car pool.) R. H. LONGFELT (5504-21859, ext. 2634). PL 3-6191. 2-1

(Zone 3)  
OLYMPIC & KERN, East Los Angeles. AURELIA NAUROTH (5355-48817, ext. 2083). AN 8-4468. 2-3

(Zone 4)  
FLORENCE & STUDEBAKER, Downey. VIRGIE F. PAPPAS (5517-20235, ext. 527). UN 3-0837. 2-4

(Zone 9)  
HAWTHORNE BLVD. & 190th ST., Torrance. AILEEN ROSE (5352-13901, ext. 2382). FR 9-9942. 2-9

KATHRYN & SEPULVEDA, Torrance. IRENE R. GROSSE (5160-14516, ext. 545). FR 5-5525. 2-9

7:30 a.m. — 4:15 p.m.

(Zone 3)  
RIVERGRADE & SAN BERNARDINO FRWY, La Puente. (Consider car pool.) ROCCO D. BILLS (2536-44622, ext. 2488). ED 3-3638. 3-3

GARFIELD & BEVERLY, Montebello. (Desire car pool.) G. E. KOPP (9420-42940, ext. 1416). PA 8-4735. 3-3

(Zone 4)  
FIRESTONE & OLD RIVER SCHOOL RD., Downey. ART MAY (9630-53037, ext. 1929). TO 1-7965. 3-4

(Zone 5)  
LINCOLN & STANTON, Anaheim. (Established car pool.) WALTER A. DAY (8920-27542, ext. 1564). JA 7-4270. 3-5

(Zone 8)  
CRENSHAW & PACIFIC COAST HWY., Torrance. CATHY DEEDS (5231-26422, ext. 1362). 3-8  
WESTERN & 237th ST., Torrance. JOHN F. KISSEL (4700-28503, ext. 1986). DA 6-8747. 3-8

(Zone 13)  
LENNOX BLVD. & PRAIRIE, Inglewood. CAROL L. TAYLOR (5600-14113, ext. 681). OR 4-1336. 3-13  
LENNOX BLVD. & FELTON, Inglewood. (Desire car pool.) VICKI WHITE (2582-35535, ext. 1432). OR 2-6303. 3-13

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA BLVD. & WESTERN, Los Angeles. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 5-1

(Zone 4)  
LAKEWOOD & IMPERIAL, Downey. (Desire car pool.) MORRIS BROWN (9410-27999, ext. 474). TO 1-8508. 5-4

(Zone 5)  
WILMINGTON & OLIVE, Compton. SHARON HOOPER (3275-43954, ext. 459). NE 2-8638. 5-5

GARDEN GROVE BLVD. & MAGNOLIA, Garden Grove. (Established car pool.) C. C. LYONS (2812-12716, ext. 581). LE 9-8354. 5-5

KATELLA & 9th ST., Anaheim. (Established car pool; via South Street.) FRED MAGIDSON (3254-44141, ext. 1257). PR 4-6946. 5-5

(Zone 8)  
CRENSHAW & 182nd ST., Torrance. (Established car pool.) LAWRENCE E. MARKS (3275-49542, ext. 459). DA 3-4932. 5-8

(Zone 14)  
HOLLYWOOD BLVD. & LA BREA, Hollywood. JOHN D'ERRICO (3142-47590, ext. 2022). 5-14

BURTON WAY & ROBERTSON, West Hollywood. (Consider car pool.) HERBERT RIESS (3551-31136, ext. 565). CR 1-7904. 5-14

## RIDES WANTED

Miscellaneous — Split Shift

(Zone 10)  
MANHATTAN BEACH BLVD. & AVIATION, Manhattan Beach. (Consider car pool; hours: 7:45 a.m.—4:30 p.m.) BOB HOLT (8821-15869, ext. 135). FR 6-5626. 20-10

## RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
VAN NESS & 67th ST., Los Angeles. (Consider car pool.) R. H. LONGFELT (5504-21859, ext. 2634). PL 3-6191. 12-1

(Zone 5)  
PARAMOUNT & WASHINGTON, Rivera. (Via Slauson, Gage or Florence.) J. H. HAGERMAN (5515-20505, ext. 1233). OX 2-5860. 12-5

7:30 a.m. — 4:15 p.m.

(Zone 3)  
RIVERGRADE & SAN BERNARDINO FRWY, La Puente. (Consider car pool.) ROCCO D. BILLS (2536-44622, ext. 2488). ED 3-3638. 13-3

GARFIELD & BEVERLY, Montebello. (Desire car pool.) G. E. KOPP (9420-42940, ext. 1416). PA 8-4735. 13-3

(Zone 5)  
LINCOLN & STANTON, Anaheim. (Established car pool.) WALTER A. DAY (8920-27542, ext. 1564). JA 7-4270. 13-5

(Zone 13)  
LENNOX BLVD. & FELTON, Inglewood. (Desire car pool.) VICKI WHITE (2582-35535, ext. 1432). OR 2-6303. 13-13

(Zone 14)  
RODEO & SANTA BARBARA, Los Angeles. A. M. DYCKOFF (8930-51214, ext. 1386). AX 4-9182. 13-14

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA BLVD. & WESTERN, Los Angeles. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 15-1

(Zone 5)  
GARDEN GROVE BLVD. & MAGNOLIA, Garden Grove. (Established car pool.) C. C. LYONS (2812-12716, ext. 581). LE 9-8354. 15-5

KATELLA & 9th ST., Anaheim. (Established car pool; via South Street.) FRED MAGIDSON (3254-44141, ext. 1257). PR 4-6946. 15-5

(Zone 8)  
CRENSHAW & 182nd ST., Torrance. (Established car pool.) LAWRENCE E. MARKS (3275-49542, ext. 459). DA 3-4932. 15-8

(Zone 14)  
BURTON WAY & ROBERTSON, West Hollywood. (Consider car pool.) HERBERT RIESS (3551-31136, ext. 565). CR 1-7904. 15-14

Miscellaneous — Split Shift

(Zone 7)  
ROSECRANS & CRENSHAW, Hawthorne. (Hours: 7:15 a.m.—4 p.m.) JACKIE BEMOWSKI (2620-39469, ext. 3563). OS 9-4177. 20-7

(Zone 10)  
MANHATTAN BEACH BLVD. & AVIATION, Manhattan Beach. (Consider car pool; hours: 7:45 a.m.—4:30 p.m.) BOB HOLT (8821-15869, ext. 135). FR 6-5626. 10-10

## SHARE THE RIDE



# A Tower In the Plain

PRESQUE ISLE

(See Page 2)

## NORTHROP

### NEWS BRIEFS

**T-38 PROGRAM**—T-38 provisioning conference for ground support equipment and review of tentative table of equipment were recently held at Northrop. Ground support equipment and spares were provisioned during the first part of the conference in the Products Display Building. Second part of the conference held at the Torrance facility provisioned spare parts for the aircraft itself. Mr. J. J. Wattai and Mr. A. D. Mancuso, both of Middletown Air Force Base, served as chairmen for the conference.

**NORTRONICS** — Stanley W. Call has been appointed Dayton representative of the Nortronics Division, it was announced by Dr. W. F. Ballhaus, vice-president and general manager of Nortronics.

**NOMENCLATURE**—Application of a pattern of organizational levels and titles to conform to standards approved by the Corporate Office has been completed in the Northrop Division. See Northrop News 21 May. Administrative Services is in the process of preparing a master chart for publication . . . The importance of conforming to this new nomenclature has been stressed by P. W. Timberlake, vice-president in charge of organization, especially in activities pertaining to organizational alignment, planning phases, correspondence, and similar functions. Pending issuance of this chart, proper Company nomenclature can be obtained by calling Administrative Services, extension 2641.

**ASSOCIATE CONTRACTING**—Major General William T. Thurman, deputy director of procurement and production for AMC, was keynote speaker at Institute of Industrial Engineers conference at Statler Hotel. Northrop's T. L. McCarthy, director of master programs and analysis, addressed a session on productivity in the airframe industry at this recent conference. One of the key points of McCarthy's speech pertained to current industry trends toward associate contracting — the banding together of two or more airframe companies that have complementary capabilities in their engineering and manufacturing organizations and facilities to produce one complete weapons system . . . General Thurman indicated that he was fully in accord with Northrop's current planning, particularly its spheres of activity relating to associate contracting as presently employed with Westinghouse on the Eagle program. (See News Briefs 18 June.) The General said, "it would appear that such prime contract-subcontract combinations could offer the possibility of developing superior products with a more economical use of existing industrial and engineering resources . . ." Northrop management is expecting a visit from General Thurman to personally review progress made in this sphere, as well as in industrial engineering and management planning.

**GENERAL MEDARIS**—Top Northrop personnel met last week with General John B. Medaris, commander, U. S. Army Ordnance Missile Command at Huntsville, Alabama, to discuss Northrop Corporation capabilities—both R&D and production. Conferring with the General were Vice Presidents Robert R. Miller, Northrop Division general manager; Dr. Wm. F. Ballhaus, Nortronics Division general manager; and M. W. Tuttle, Radioplane Division general manager. Topics covered Divisional missile and missile support capability, Divisional specific product areas and complementary features of Company organization that provide for successful results in broad weapon system programs.

## Miller Announces Increase For Salaried Norcrafters

Northrop Aircraft, Inc., announced a five per cent general salary increase for approximately 6000 people in the Company's Northrop, Nortronics and Radioplane Divisions and in the Beverly Hills general offices.

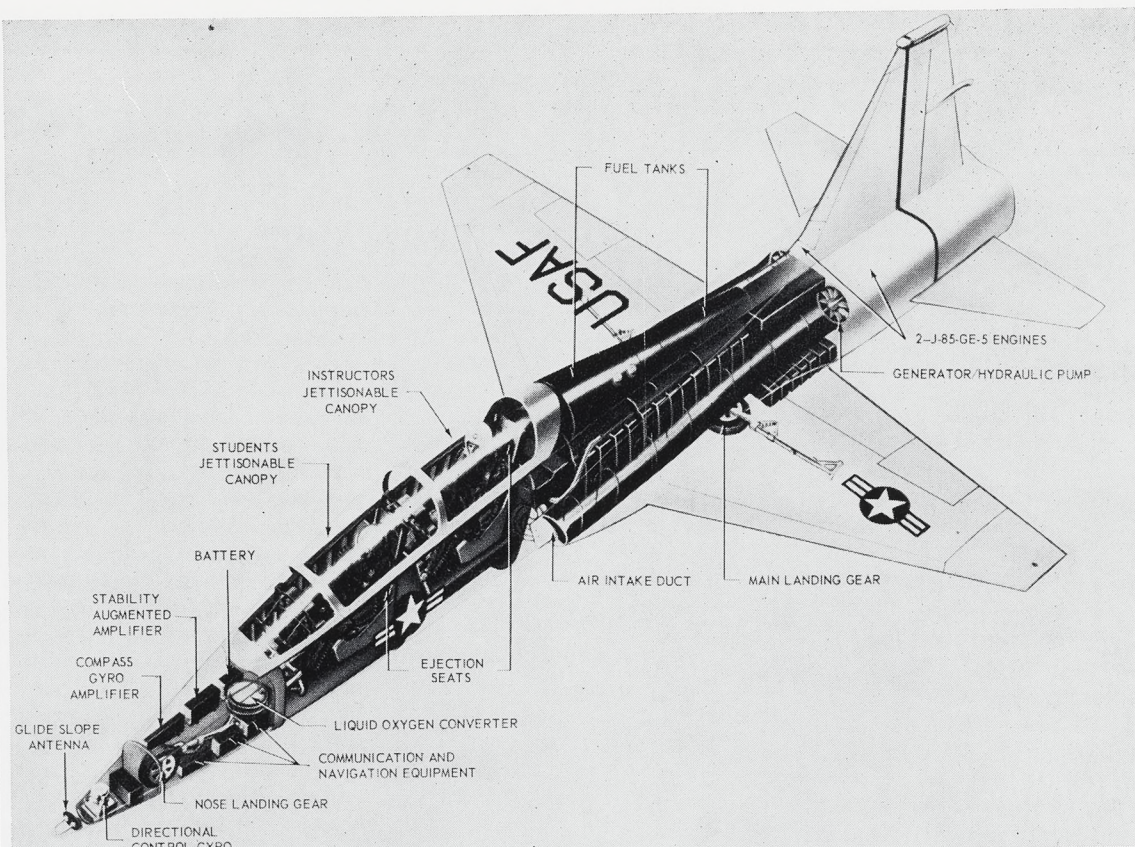
The increase, retroactive to June 16, will apply to all salaried personnel receiving less than \$25,000 a year base salary.

Northrop and Nortronics salaried personnel will also receive an additional paid holiday, announced for hourly personnel May 19. This year the holiday will be taken on December 24, but in subsequent years it will be a "floating" holiday, taken on a date to be announced early in each year.

The salary increase is in accordance with the Company's established policy of maintaining compensation and other benefits at a level commensurate with that in other airframe companies in the local area.

It follows a general wage increase, ranging from two cents to 11 cents per hour for hourly-rated personnel, announced May 19.

The salary increase will apply to personnel in Northrop plants and facilities at Hawthorne, Anaheim, Van Nuys, Torrance, El Segundo, Los Angeles International Airport and Edwards Air Force Base, California; Cape Canaveral, Florida; and El Paso, Texas.



**FIRST INSIDE VIEW OF T-38**—This is the first detailed internal view of the nation's newest supersonic trainer whose prototype is nearing completion. Drawing shows location of key internal components which make the aircraft unique in its field. Ease of maintenance and low operating costs through design simplicity keynote the T-38. Crews have access to all parts of airplane without use of special ladders or stands.

## Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, July 2, 1958

## Hawk Missile System Operational With U.S. Army - - Secretary Brucker

Northrop Aircraft added more weight to the free world's balance of power when the Hawk

missile became officially operational with the U. S. Army last month.

The first two Hawk batteries near New York City and Washington, D.C.

## Corporation Earnings up Over 1957

Earnings of Northrop Aircraft for the nine months which ended April 30, 1958, were substantially ahead of the like period a year ago in spite of reduced sales volume, Whitley C. Collins, president, announced last week.

The largest earnings gain over the preceding year came in the third quarter, the three months ended April 30, he added.

Net income for the three quarters amounted to \$4,732,187, equal to \$2.99 a share on 1,583,173 shares of common stock outstanding at April 30. Earnings for the corresponding period a year ago were \$3,549,488, or \$2.33 a share on the 1,524,290 shares then outstanding. Third quarter net income amounted to \$1.18 a share compared with 86 cents a share last year.

Sales and other income for the nine months which ended April 30 totaled \$191,678,444, compared with \$204,339,566 for the same portion of the preceding year.

## JULY 4 HOLIDAY FOR NORCRAFTERS

All Northrop facilities will be closed on Friday, July 4, in observance of Independence Day.

This is a paid holiday for all personnel on the active payroll as of July 3, 1958, and not on leave. Paychecks will be available before the holiday.

## SAC Airmen Launch Their First Snark

Strategic Air Command personnel fired the first of a series of operational prototype Northrop Snark SM-62 intercontinental missiles last week from the Air Force Missile Test Center's Cape Canaveral launch site.

The test was conducted by SAC's 556th Strategic Missile Squadron under the direction of ARDC's 6555th Guided Missiles Squadron, which is training the 556th.

Military personnel who directed the operations are known to many Norcrafters at Hawthorne and Cape Canaveral. Some members of the 6555th Guided Missiles Squadron who supervised launch operations included Captain J. C. Bowers, M/Sgt. George C. DeRidder and M/Sgt. E. P. Williams.

Members of the 556th Strategic Missiles Squadron who took part included Captain G. E. Sapp, T/Sgt. P. A. Countryman, T/Sgt. D. M. Givens, S/Sgt. M. W. Denny and A/2C R. J. McCarthy. Major R. W. Cullen commands the 6555th and Colonel R. W. Beck commands the 556th.

Northrop is principal subcontractor for the Hawk, newest of the Army's defense missiles to reach production status. Raytheon Manufacturing Company is prime contractor.

Northrop Division designed the airframe components and launcher for the Hawk and was responsible for over-all design aspects of the loader and pallet. Nortronics administered the contract and manufactures the hardware.

In accepting the missile, Secretary Brucker said, "Its potentialities represent a tremendous advance in the vital field of air defense. Hawk will increase our kill potentialities so that we can now cover the whole span of aircraft altitudes with defensive missiles capable of dealing with any aircraft now in operational use."

The Army, Secretary Brucker stated, will establish additional launching sites around other key defense areas as fast as Hawk missiles and trained Army personnel become available.

Emphasizing Hawk's low-altitude kill capability, he said, "No longer can an enemy hope to attack our major cities and key defense areas by flying at very low altitudes to escape radar detection."

In addition to its use at fixed installations where it will fill the gap left unguarded by present high-altitude anti-aircraft missiles, Hawk will be employed on the battlefield. In its mobile role, Hawk will help solve the problem of low-level air attacks on combat troops.



# A Tower in the Plain

AIREPORTER VISITS SITE OF FIRST SNARK  
BASE AT PRESQUE ISLE, MAINE

A howling wind creased Cape Canaveral as they left. It flattened the water of the Indian River, then raised waves, then whipped the waves to a froth. It littered the highways with debris from the Florida palmetto forests. It buffeted the car. It sent stinging salt spray through the air. They could feel the pressure on their ears.

## FLORIDA BREEZE

"Is this a hurricane?"

"It's too early for hurricanes. There is an old saying: 'June—too soon, July, stand by; August, if you must; September, remember; October, it's over.' This is only April."

"It's a strong wind though."

That was right. It was a strong wind. A man couldn't laugh at this weather.

Norcrafters Carl Loffback at the Cape had said, "Keep on going after you pass Patrick. Keep on going down the peninsula and you will come out at Vero Beach and there will be the Sunshine Parkway all the way to Miami. Just keep on going."

But it didn't work out this

way. They took a turn to the right; after the causeway across the river, there was Melbourne.

The wind died down and showers came, half an hour apart.

They went south and the road was under construction. The

## By Aireporter

swamps were being made into a road. A super road of some kind.

Then came Vero Beach and they took the feeder highway to U.S. Route 1. Inland—through fine flat grassy country. Good cattle country. Orange grove country.

And they stopped for orange juice at the roadside stand and had two glasses each and went on.

## TURNPIKE TO MIAMI

And they came to the Sunshine Highway and they paid the toll and went on the highway.

Minimum speed limit — 60 miles an hour.

Miami was 108 miles away.

It was a fine highway. Fine service areas and snack bars were spaced along the way. They

rushed passed these and the Florida country peeled back beneath them.

They were in Miami at 5 p.m.

In Miami Norcrafters stop at the wonderfully appointed Miama Springs Hotel. The rooms are large and scented, the corridors long, and steps muffled in the deep carpets.

The next morning it was a continental breakfast, supplemented by bacon and eggs at the good Miami Springs Hotel grill.

The first airplane out was a coach non-stop to Boston.

It was a good thing they had had a big breakfast—Boston was a long way off.

It was an over-water flight and the stewardesses gave a demonstration of how to put on the life jackets.

A great liner was heading out to sea. Although it left a foaming wake that extended back for miles, it seemed to drift backwards as they overhauled it at 320 miles an hour.

## BOSTON BELOW

Next was the coast. Now Rhode Island was straight down. Woonsocket was port. Providence and Pawtucket starboard. The states came fast. This was Massachusetts. Boston was a big city on a series of low hills.

They landed, scooting low across Boston Harbor to a fine landing field with ships close by.

"Do you want to go over the bridge or through the tunnel?" the cab driver wanted to know.

"We don't know. What is the difference?"

"Either one is okay."

They went to the Statler and checked in. Service ran wild. The doorman. The man that took their bags from the door to the desk. The man that took their bags to the room.

Aireporter's suitcase was broken and wouldn't stay shut. Shirt sleeves trailed.

"I'd put a rope around it, but I don't think it would be acceptable."

That night they ate Maine lobster at Union Oyster House.

The next day was Saturday and Aireporter wrote all day.

Sunday night they took a Peter Pan Line bus for Springfield.

## EIGHTH DOWN EAST

The next morning they were at Westover — headquarters Eighth Air Force.

Here, under the command of Major General Walter C. Sweeney, jr., the first Snark missiles would take up their responsibilities of deterrent influence and strike force in being for the free world.

The Eighth had moved to New England's Westover AFB from Texas in 1955. They brought their B-47s and KC-97s into the "down east" skies and overnight the cradle area of American liberty became the world's guardian of peace.

The Eighth moved to New England almost without public notice. They took up their patrols from Loring, Dow, and Pease and from home base at Westover.

The big B-52s came to the Eighth at Loring in June of 1956. Their rate of take-off climb was a thing to open your mouth and make you stare.

The KC-135 jet Stratotankers came to the Eighth in 1957—also

## General Sweeney



To all Norcrafters:

Addition of the SNARK to the Strategic Air Command inventory marks significant progress in our continuing program to keep the U. S. Air Force equipped with the most modern weapons which current technology has devised. Not only has the SNARK demonstrated a capability to place a warhead on targets more than 5000 miles distant but it adds versatility and flexibility to our manned bomber forces.

We are pleased that the nation's first SNARK missile unit, the 556th Strategic Missile Squadron, will become a part of the Eighth Air Force at Presque Isle, Maine, when initial training at Patrick Air Force Base, Florida, is concluded.

Major General Walter C. Sweeney, jr.  
Commander Eighth Air Force

at Loring — and refueling missions began to take place so high in the New England sky that you couldn't see the two jets, tanker and bomber, transferring thousands of gallons of fuel at top speed.

America's arsenal of air striking power in the northeastern United States has built a whole new network of bases and created a major new industry.

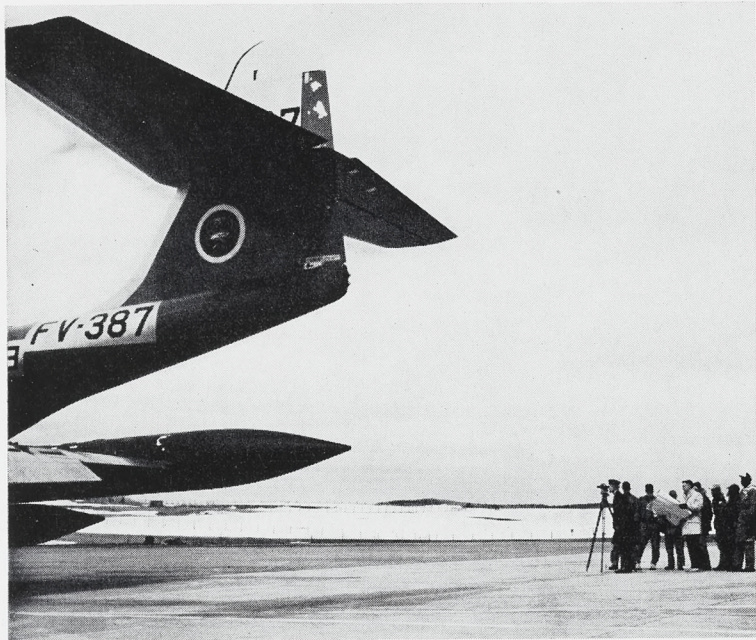
Quietly, steadily, Eighth Air Force of the Strategic Air Command has revolutionized the de-

fense picture in the Northeast since its move from Texas to Massachusetts in 1955. The minutemen of today ride B-52 and B-47 jet bombers.

## PROXIMATE ECONOMICS

The economic effects of this revolution have been felt most intensely in the communities that surround Westover; Plattsburgh Air Force Base in N.Y.; Pease Air Force Base, N.H.; and Dow, Loring and Presque Isle Air Force Bases, Maine.

(See Page 3)



**THE ENGINEERS**—A sign of tomorrow. First Lieutenant Jim Margoli and civilian M. E. Wiggin run lines and check points for Snark blastoff pads at Presque Isle Air Force Base. Building contracts had just gone out for bid. Scorpion is ADC, 23rd Fighter Group, on alert to knock down anything unfriendly or unidentified in northeast skies. ADC Scorpion men watching missile facility take shape are, from left, Lieutenant Sid Bradfield, Oakland, California; Lieutenant Bob Defeo, West Haven, Connecticut; Sergeant Bob Sutherland, Petoskey, Michigan; A/2c Willie Folson, Adel, Georgia; A/3c Al Page, Richmond, Virginia; A/3c Paul Parks, Springfield, Massachusetts; and A/1c Fred Pinkins, East Chicago, Indiana. Windy day.



**PLANS**—Major Ernest J. Wells, Operations officer, Eighth Air Force Headquarters, discusses the serious business of operations with Aireporter. Operational Snark blastoffs require no blockhouse. Security blankets much on Snark.



**SNARK PHOTOS**—Major Darrill Trenholm, Eighth Air Force PIO office, and Colonel Van Vliet scan Snark brochures and photographs brought by Aireporter. Request was for more—more photos, more stories and more features.

**Northrop News**

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No. 20

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# New England - - For a Free World

The reason: over \$17,000,000 a month in Eighth Air Force salaries to airmen, officers and civilians, or a total of \$207,000,000 a year. Air Force figures show that almost 80 per cent of this money, after taxes, returns to the immediate area.

That consideration, plus nearly 31½ billion dollars' worth of real estate, aircraft, inventories and equipment belonging to the command adds up to big business for the Northeast.

Most of the supplies are purchased from and almost all the construction work on Eighth's bases is performed by businessmen of the area. Eighth Air Force bolsters the area's economy as well as the nation's defense.

Day-to-day business of General Sweeney's Eighth Air Force is to mold a product without a price tag: peace.

## SAC IS SPARTAN

Despite its physical assets, states the General, SAC is a "Spartan organization". He explained that the command achieves maximum combat capability from the resources made available to it through the use of good management procedures.

Less than six hours from Moscow lies the heart of America's industry in the Northeast. But the reverse is also true and Moscow is well aware of SAC's potential punch.

"The Soviet threat," General Sweeney says, "is poised in all areas—military, political, psychological. The mission of our Air Force, of which the Snark is part, is not to destroy the Soviets and Communism, because the military solution to the problem of Communism is not the only solution. Our military objective is simply to deny Communism the ability to use war as a means of attaining its aim—to deny it at least this medium in its offensive against the world."

## SNARK POWER

"The Snark at Presque Isle will add unmanned invincibility, with its hydrogen warhead, to this military posture. America's deterrent might is a 24-hour hard-hitting juggernaut of destruction."

"The Snark," said the General, "can put a warhead on targets 5000 miles away. It adds flexibility and versatility to our manned bomber forces."

With Colonel Charles T. Van Vliet, chief of Information, and Major Darrill Trenholm, Air-reporter talked to personnel people about the new breed of fighting man—the missileairman.

Then Aireporter talked facilities and operations. Presque Isle Air Force Base would undergo a metamorphosis. The Snark would be placed where the Scorpions are poised on 24-hour alert for

their Air Defense Command mission—that of knocking any attacker out of the skies with their Mighty Mouse rockets or their Falcons or their Genie nuclear bombs.

Lieutenant J. W. Cole, chief of Construction Division, and civilian J. P. Golas, talked construction of the Snark base. It would be a series of hangar-type buildings fronting a row of round concrete pads. Snark missiles would take up their endless station-to-station preventive maintenance rounds, with the round being punctuated by poising on the pad for simulated blastoff.

"This is new," they said. "This is the first base of its kind in the country—maybe in the world. You're seeing on blueprints the beginning of an era."

"The contracts are out now for bid. Engineering work is under way. When the ground thaws."

"You should stop in and see Colonel Cipola in Boston. He is handling the bids. There should be an announcement when they are officially out."

Aireporter talked to Major Ernest J. Wells, director of Plans office, Eighth Plans Division.

"We take over at Presque Isle 1 July," he said.

"Send us pictures of the Snark," said Colonel Van Vliet. "Send us slides. Send us color stuff. New England wants to know what the Snark looks like."

"Okay," said Aireporter.

## EASTERN DISPLAY

"A million people will attend the Springfield Exposition during the week of September 13. Let's display the Snark there. Right at the grounds entrance. This will be the Eastern States Exposition."

"Okay," said Aireporter. "How about the Northrop News?"

"Put you on the list." "It had been a long day. They shook hands."

"If you ever get to the plant, be sure and call."

"Will do."

"Say hello to Captain Martin up at Loring."

"All right."

"SAC will go to Presque Isle this summer."

"Northrop country."

"And potatoes."

"Right."

"So long."

The next day at noon they left for Presque Isle.

"This will be about as far east as you can get and stay in the United States."

They flew Northeast Airlines.

The way was over country that looked like some parts of the west—like around San Francisco. Woods, clearings, small mountains, and the sea. But there were many lakes and rivers.

There was snow in patches on the ground.

"Another Thule?"

"No!"

The clouds closed in. They were a long way north.

Instrument landings.

## FAMILIAR SCORPIONS

They arrived at Presque Isle in the early evening.

Scorpions were on the line and it looked like home. This was Presque Isle Air Force Base. It looked good to see the up-swept tails and the big wing-tip tanks.

They took a cab downtown and checked into the North East-land Hotel.

But there was no rest.

# Andy Anderson to Head Presque Isle Snark Team



**TO PRESQUE ISLE**—Colonel D. A. Simcoe, Air Force plant representative, congratulates Gaylord Anderson on appointment as general supervisor of field operations at Presque Isle. Anderson will assist SAC in preparation of Snark sites at nation's first operational intercontinental missile base. Cooperation of Northrop crew with SAC in base construction marks firsts for Company, for SAC.

When Gaylord Anderson leaves for the new SAC Snark base at Presque Isle next week, another "first" will be established by Northrop—another "first" also in Air Force annals.

Mr. Anderson was recently appointed general supervisor of field operations, Field Service Group, in charge of operations at Presque Isle, Maine, it was announced by Robert R. Miller, vice-president and general manager, Northrop Division.

This is the first time a contractor has been asked to participate in setting up a Strategic Air Command missile base and bringing it to a point where it will be completely operational.

Under the newly implemented weapons system concept, Northrop not only builds the missile and ground equipment, but also participates in site construction, laying out site requirements. Initial planning for site layout was accomplished by the Weapons System Analysis group and the Weapons System Project Office.

By agreement with Nortronics Division, the administration of all Northrop and Nortronics activities at Presque Isle AFB will be the responsibility of the Field Service Group of Customer Service section.

Much of the actual installation and checkout work will be done by SAC personnel trained by Northrop at Amarillo and Patrick AFBs by Customer Field

Service technical representatives. Mr. Anderson will supervise the installation and checkout of all weapons system equipment, both operational and backup maintenance.

Part of the job entails installation of a complete Northrop-designed intersite communications system, including countdown clock communications, alert sound system, and hot line intercom from all key positions to all key positions.

Twenty-two stations can talk to or from each other. During launch or simulated launch operations, it is necessary that all members of the team have direct communications with each other and that the launch control officer have communications with all personnel in order to establish that operations are conducted in the right time and sequence.

Mr. Anderson's degree in electrical engineering from the University of Minnesota and his years of experience with the Illinois Bell Telephone Company as well as the Army Signal Corps are special assets in this assignment. In his six years at Northrop, Mr. Anderson has been an SM-62 instructor and in charge of technical representatives for the past four years.

Northrop plans to have as many as 40 men on hand for site operations. They will come from the Northrop Division, Nortronics, and Patrick AFB.

"We have the best maintenance officer in the ADC," said Captain Boyd.

"Right," said Walt.

## MEET THE PEOPLE

"I want to talk to people in the town about getting the Snark."

"I'll introduce you," said Captain Boyd.

Jim Barrows came in. He was

(Continued on Page 5)



**TOPS**—"Airmen of the Month" for March is T/Sgt. Owen C. Burns, Jr., whose outstanding performance and attention to duty won him this first 556th honor. Colonel Beck presents Sergeant Owen with Snark model furnished by Northrop. Honor will be bestowed each 30 days on Snark man who rates the highest in the Cape squadron.



**SNARK TECH REP MEN**—First Snark tech rep team. From left are Jim McFarlane, Scotty Johnson, Bob Pricer, Don Smith, Joe Kaiser, Bob Kruse, Ed Sullivan, John Cahill, Doug Marine, O. P. Thomas, Terry White, Gene Agar. These men are now assigned to the Cape where they are working the Snark with Colonel Beck's 556th. They will go to Presque Isle along with the squadron.



## Presque Isle: "We Want To See a Snark Missile"

The people of Presque Isle would soon have the first intercontinental missile in their midst. And all that goes with it. The men who would man and fire it. The buildings that would house it. The bombs—the hydrogen bombs that the Snark would carry.

Presque Isle would be distinguished above all other American cities.

People make a community. The physical part, the land, is there and always has been but, without people, a place is only a wilderness.

What do the people of Presque Isle think about it?

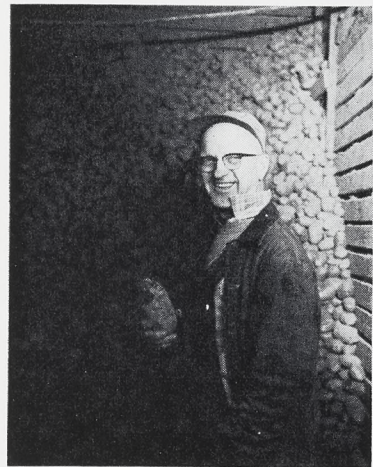
S. Wilson Allen — potato farmer.

Farmer Allen, 55, was in the potato house.

He was helping tend a potato machine, the likes of which Aireporter had never seen before. The potatoes were loaded into it from a mountain of potatoes and just as they came from the ground. They came out of the machine washed and then were sacked.

"Come on to the office," said Mr. Allen. "We can sit down there and talk."

"We dig our potatoes and bring them here. They are warehoused here in bulk and when the orders come in everybody



itches in and away they go. We're after Idaho.

"This is one of our biggest years.

"My ranch is four miles out of town. Three hundred and ten acres. Crop land — 125 acres. Potatoes out of that—75.

"Cows? No, not any more. We can buy milk cheaper in the store. When the kids were little we had cows and the general run of farm stuff—but not now. The missus and I, we just go to town.

"Snark?"

"The base takes land off tax rolls—that's my only complaint. Airplanes or missiles don't bother potatoes.

"Like the Air Force people. Have friends at Presque Isle. But the farm is my life.

"You want to try a Maine Russet but make sure it's from Maine. 'Cats' are good too—all purpose. Idaho Russet is fine for baking. My wife always cuts a little off each end of the potato when she bakes them. Good? The best.

"Yes sir—Maine has potatoes."

Mrs. Carl Moskowitz—housewife.

Valerie Moskowitz had brand new twins, three and a half months old—Linda and Laura.

Her house was spotless.

"Everybody loves Maine," she said. "It's my adopted state. I'm from Pennsylvania, but Maine is our home now. My husband is a potato man.

"We've been here 10 years. No part of our married life was spent anywhere else—so naturally this is home. We have five children—eight years on down to the twins. We are very happy

that we can raise them here.

"I'm so interested in the hospital. And I must tell you how Captain Boyd and Colonel McGowan and all the others helped us raise money.



"The boys at the base helped. They really helped.

"We are proud to have the Snark coming here. I am dying to see it. The children went to see it and talk about it often.

"Atom bombs don't bother us. You see the base is a fixture. It is part of the town. We have many friends. They are part of our social life. They are part of Presque Isle."

John Henchy — Presque Isle city manager.

John is a businessman. His offices were above the police station in the Presque Isle city government complex.

The offices were modest ones and showed the wear that busy offices get from long service to the public and many hours of work by those serving.

John was in shirt sleeves.

"I guess I'm a typical Maine family man. My wife is Juliette Pomerleau from Waterville. We have two boys — two and four years. I'm Irish and Juliette is French. The good family life we believe we have is a privilege.

"Just to show you how the people are here—. We need a hospital in this area. Cost will be about \$1,500,000. We had a drive here. Raised \$670,000.

"That was over our quota by eleven per cent. And the average family gave \$150!

"Now about the military. The Air Force. Your Scorpions. Captain Boyd here. Colonel McGowan. You know the base really helped a lot in the hospital drive.

"Personally I am proud. And it is a matter of pride with all Presque Isle people.

"Our monthly community relations council meetings with the Air Force people are very good. We sit down — alter egos, you know. The base chaplain and our churchmen. Their judge advocate and our police chief. Their public information people and our newspaper people—and so on.

"We have lunch and we talk out our various problems. Well—as a consequence, we have no problems. The Air Force is not a soulless corporation. Neither is

the city of Presque Isle.

"Incidentally, the Air Force doctor is a member of the hospital staff.

"And the dances — our first dance drew 150 people. The last one—over 400.

"At one of our meetings, we saw a movie of the Snark and it



really looked like something. Want to see the real article. Anxious to see it. Want to see it successful in every way.

"You see the base here on the edge of Presque Isle is a stabilizing influence on our economy. The base is also a factor in the growth of Presque Isle.

"We are proud to have been selected as the first Snark base."

Eugene K. Rowe—editor of the Presque Isle Star-Herald.

He has been in Presque Isle for eleven years, editor of the paper for nine. He came up from Bangor. His background is public relations.

The Presque Isle Star-Herald is printed right in the shop. It is a weekly.

His office was typical. Galley proofs, shears, a paste pot. A dictionary. The smell of ink and the steady busy beat of the presses would tell you that this was a publishing house — even with your eyes closed.

Editor Rowe smoked a pipe.

"Mr. Rowe, people usually express themselves by writing letters to the editor. Have you received any letters on the Snark's coming to Presque Isle?"

"No—. No letters.

"The reaction, if you could call it that, is the same feeling that we had when the Scorpions came. We recognized them as an important adjunct to our economy in Presque Isle and to the defense of this nation.

"Potatoes we have. Maine is the biggest potato producer in the 48. Potatoes and airplanes—now missiles.

"Both fields looking up.

"Snark coming. Potato crop excellent this year.



"You know the military is one of our best potato customers. Any GI that has had KP duty can tell you that."

"I like my city. Very much attached to it. So much so that when I retire—know what?"

"I'm going to stay right here.

"Oh yes—I have two daughters. I'm even a grandfather.

"We are anxious to see the Snark.

"Now let's turn this interview the other way. Let me ask you a few questions."

"Fire away," said Aireporter.

Mrs. Madelyn Marshall—bookkeeper.

Madelyn, bookkeeper for the local Ford dealer, Berry Motors, is a native of Presque Isle.

"Sit down," she said. "Where will this be used?"

Aireporter told her.

"About Presque Isle. We used to be isolated. Nothing in the winter—but things opened up here beginning in 1941 and 1942. The war, I guess.

"Potatoes? They started to



come into their own about then. They kept working on land production. Better agricultural methods got us from 100 barrels an acre to I don't know what now.

"The base? It is part of the town. They are our customers. They buy cars all the time. Part of our economy.

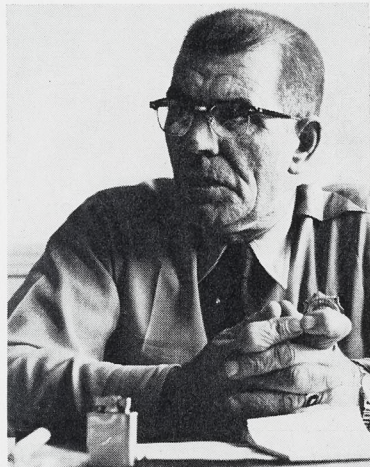
"My husband is manager of WAGM-WABM radio. He takes care of our social obligations.

"What do I think about the Snark—?"

"Haven't thought much about it. I guess it might be as big as an airplane. They say it is big. Is it?"

"Pretty big," said Aireporter. And he told her about the Snark.

Watson E. Burlock—chief of police.



He is a grizzled man. Authority fits him like a well cut suit. He has it—you know it—but you expect him to have it and it's all right.

"I'm from over in New Brunswick," he said. "Been in Maine 31 years. Presque Isle—18.

"I started on the Presque Isle force as a patrolman. Been chief for 10 years.

"My job, like the city manager's, is appointive. City council.

"Presque Isle is a city of friendly neighborhoods. Good influences. We've had no fatal automobile accidents since 1948. Drivers are careful. No subversives here. Just don't have them.

"I've got nine men on the force—that's for 13,000 people.

Usually you have 10 men for every 10,000 population. I need one more man though. Going to ask the council next meeting.

"Air Force men—? Just like civilians. You can't tell the difference except they are more law-abiding. Listen. I would sooner take Air Force people than civilians in population increases. Population increases call for adjustments. Learning curves. Air Force men are more tractable.

"The finest thing we do to understand each other is the monthly community relations council meeting.

"I would certainly like to see a Snark. Must be some bird.

"Fine—bring them in. We're proud to have the base here. First one?"

"First one," said Aireporter.

"Fine."

The chief's handshake was like the chief—an all-man handshake.

H. Travers Smith — Presque Isle churchman.

Pastor Smith was in his study.

"My sermon for next Sunday," he said, apologetically indicating the scattering of papers on his desk.

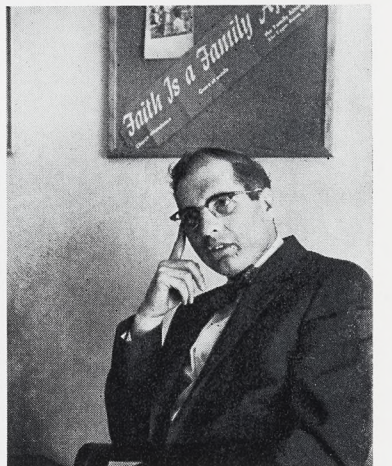
Reverend Smith's church was the Grant Memorial Methodist Church on the corner of Academy and Worth Streets.

He was a young man. He was distinguished in being pastor of the largest Presque Isle church.

"Can we talk without mentioning weapons?" he had asked over the phone.

"We can talk about people," said Aireporter.

Now here in the quiet study, Aireporter asked him questions about people.



"My church is open to all Air Force men," he said.

"The Air Force, like all military organizations, is very conscious of the spiritual need. All denominations are represented at the base.

"However, when men come here, they oftentimes like to belong. They come to my church. And they come to the other churches. This is because they miss being a part of things like they were at home.

"We welcome this. Our leagues, committees, groups all have Air Force men on their rolls.

"And I wish you would say in your story that this is true. The doors are always open. We will welcome your Snark men. Tell them that they are welcome and I am sure this goes for all other Presque Isle churches."

"I also want to say that two of our finest Sunday school teachers are from the base.

"I have performed the marriage ceremony for many Air Force boys here at Presque Isle.

"We have a coffee hour once a month. All servicemen are invited and, furthermore, are honored guests.

"Now come, let me show you our church. We have recently remodeled."



# Snark - - Intercontinental

a tall man and young for a correspondent. He wore a sports car driver's cap.

"This man scoops the nation," said Captain Boyd.

"When do the Snarks come?"

"That is status," said Aireporter.

## PUGILIST PROTEGE

After dinner, they went with Barrows to cover the prize fights at Fort Fairfield.

The bureau chief drove like a low flying F-89.

They arrived at the fights in time to see the main event. They saw Young Beau Jack decision "Babe" McCarron in 10 rounds.

And there was Colonel Leland S. McGowan, commander of the Presque Isle Air Force Base, in McCarron's corner.

"The colonel boxes with the 'Babe'," said Barrows.

"Manages him?"

"Holds his own with him too. Gets right in the ring and trains with him. Colonel has brought 'Babe' a long way."

"This boy would do all right at the legion at home," said Aireporter.

The next morning they went out to the base and to the alert hangar and took pictures of Air Force engineers running lines for the Snark pads.

An F-89 made a steep climb off the runway. Afterburners left a colored jet trail.

**SNARK RANGE** — Snark's ranging 6000 miles plus from Presque Isle, Maine, takes in major portion of the world. Southern Africa, southern India, the Antipodes are only parts of inhabited world out of range.

"Those airplanes have been here a long time."

"It does you good to see them."

And later, talking to the fighter pilots, it was the same as other bases. What was the difference between a bomber pilot and a fighter pilot?

"I don't know, but there is a big difference," Colonel Lassiter, CO at Thule, had said.

Aireporter's own way of expressing it—"If you have never lived with a fighter pilot outfit, you have never lived."

"Bomber boys are professors," someone else said. "They're big wheels on big wheels. Fighter pilots are the football team. They don't have wheels — they just deal."

"What will the launch officer be? That way?"

"He'll be something, all right. Really something. The president of the university, I guess."

That night and the next day Aireporter talked to Presque Isle people. He felt at home with them. They seemed to feel at home with him.

"We are proud of Maine," they said. "If we could be born over again and raised over again and go to school over again, we would do it just the same—all in Maine."

"Have you ever been to California?"

"No—but someday—"

## NO STRANGER

Aireporter was no stranger to Presque Isle—not with the Scorpion there. He belonged to the Scorpion. And the Scorpion had been in their skies a long time.

"The Snark? Would sure like to see it. Atomic bombs here? That will be all right. No, we

don't worry. The Air Force knows how to handle these things. It will be all right."

After three days they left for home.

As the airplane approached the coast and home, Aireporter looked at the stars.

"Will you have champagne?" asked the stewardess, just like the Thule homecoming.

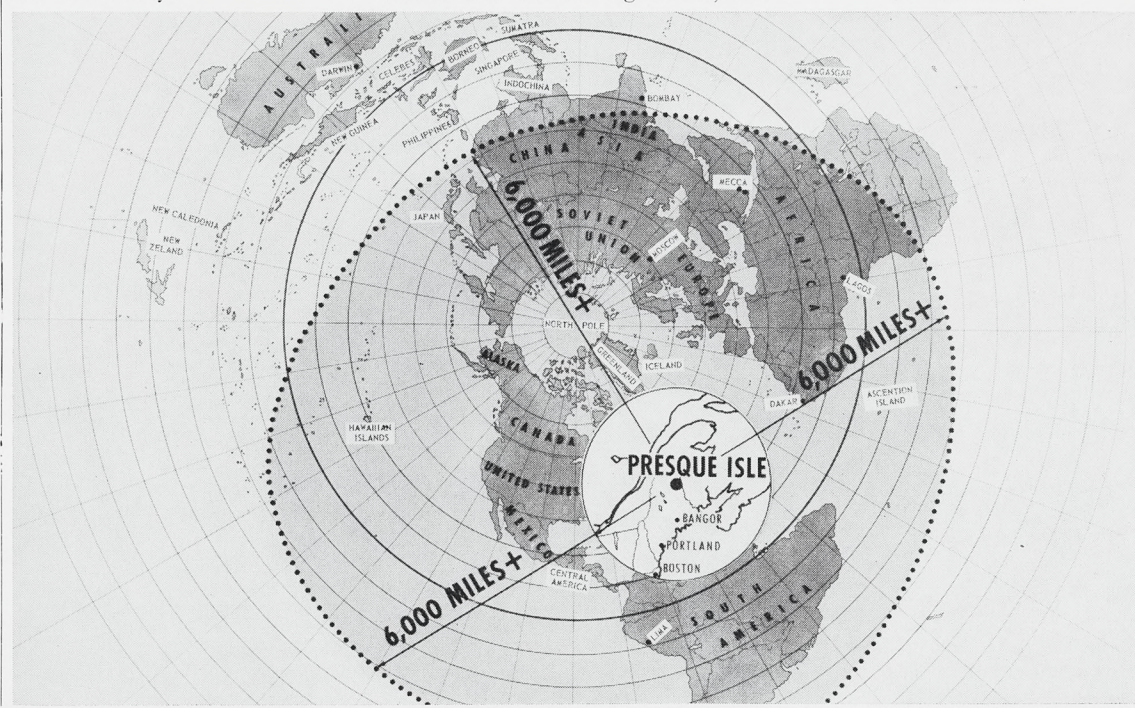
"Yes," said Aireporter. And as he drank it he looked at the stars and knew what he wanted to know.

He held up his glass in a silent toast.

"To the space age," he said. "And to you Snark missiles on your solitary missions, for you are the beginning."

And he wished something that was perhaps wrong to wish for—that he had been born a quarter of a century later.

(Conclusion)



# Heyday in Disney's Den Northrop Day at Egyptian

## — Lure is Trip to Tropics

Norcrafters will be heading for the Egyptian to be transported to the South Pacific.

On Northrop Day, July 20, special reduced-rate arrangements have been made with the Egyptian Theatre, Hollywood, for both matinee and evening performances.

Loge seats, regularly \$2.80, will be available to Norcrafters.

July 20 only, at \$2.40. Orchestra accommodations have been reduced from \$2.20 to \$1.90. Both prices include tax.

All seats will be reserved and may be secured only by use of a special form available at Personnel Activities and Services, Plant One, extension 2784.

No orders will be accepted after July 15.

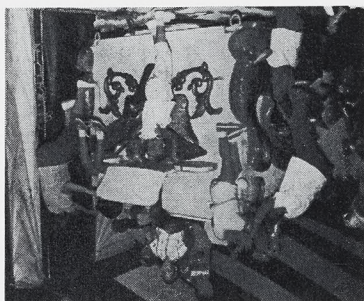


**JOINT JUNKET**—Picnickers converge at Holidayland gate—symbol of the carnival atmosphere within. On the right are Mrs. Gerry Simonek and the Simonek brood. Daddy is in the Engineering Lab. Finance Norcrafter Ed Allee, approaching the turnstile, is followed by his son Randall. The all-day jamboree featured games and special events.



# SOON

you can help



## BRAVE-AND-SQUAW-HOP

Heap big tepee is scene of much stomping and whooping as Norcrafter offspring join in ritual chants and gyrations led by Disneyland Indians. Other highlights of the main tent program were provided by Spanish cantos and bailes.

## HIPPODROME HACKNEY—

Having never seen the gilded chariots that comprise the van of an arriving circus, the kids clambered aboard and pretended they were behind plumed prancing steeds. Below, Marshall Lucky Lerado and the Colorado Kid display "peace-makers" that tamed West.



# Earnings —

(Continued from Page 1)

fiscal year. Third quarter volume was \$66,154,276, compared with \$69,015,592 for the like period a year ago.

Mr. Collins attributed the strong earnings showing to improved efficiency of operations and tighter control of costs. He emphasized Northrop is making every effort to arrest the decline in sales volume.

"We believe our efforts in this regard are closely allied with the national interest," Mr. Collins said. "In at least two major programs Northrop has achieved outstanding low-cost solutions to U. S. defense problems."

"The Snark is the only intercontinental missile now available for U. S. defense and is likely to remain so for some time to come," he said. "The estimated cost of a Snark squadron is substantially less than that of a comparable heavy bomber squadron. Yet the Snark has not been ordered in sufficient quantities to take full advantage of its effectiveness."

The T-38 supersonic trainer program has been slowed by stretchouts, the president said. The military services, however, have expressed interest in the plane because it can be utilized for training in place of combat-type airplanes and thus result in cost savings of "hundreds of millions of dollars during the life of the airplanes".

The company's newer projects include a number closely connected with ballistic missiles and space flight. Datico is being developed for application to the Nike-Hercules air defense weapons system. Northrop is competing in the Minuteman and other ballistic missile programs. An automatic star-tracking device, suitable in daylight as well as darkness, has been developed to be used in space vehicle and missile guidance systems.

Northrop has established a space laboratory program under the name of Project BROOM (Ballistic Recovery of Orbited Man). Proposals are being made to the military agencies under this project, Mr. Collins said.

Backlog at April 30, 1958, totaled \$264,000,000, compared with \$275,000,000 three months earlier at January 31 and \$279,000,000 at April 30, 1957. About 66 per cent of current backlog is in unmanned aircraft and missile work, including the Snark, the Hawk, Radioplane drones, and other projects in research and development stages.

Another 22 per cent is in air-frame sub-contracting on the Boeing jet transports and tankers and assemblies for McDonnell fighter planes. Prime manned aircraft contracts, primarily the T-38, account for 10 per cent, with the remaining two per cent miscellaneous products from all Divisions of the Company. Northrop is heavily involved in electronics work, with about one-fifth of its personnel so engaged.

In commenting on cost controls efforts, Mr. Collins pointed to savings of \$500,000 in the last 12 months through consolidation of organizational elements at the Northrop Division. Other moves under way will save an additional \$250,000. Major system improvements in administrative and clerical activities will result in an annual reduction of \$500,000.





## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Items advertised in "For Sale" and "For Sale or Trade" categories are limited to a maximum of \$50.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish

calls. Replies to box numbers are to be in writing. Box number replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

### FOR SALE

DRUM, metal snare-type, stand, \$20. FR 9-9616. A  
 CHILDREN'S CLOTHING, girl's sizes 4-6, teddy bear coat, dresses, skirts; boy's sizes 6-18 mo, suits, others; from 50c. Box 2003. A  
 BABY EQUIPMENT, play pen w/pad, jump chair, \$20. PL 5-6610. A  
 DINING ROOM TABLE, Barker Bros. mahogany drop leaf-type, 2 extra leaves, \$50. PL 6-7877. A  
 REVOLVER, Colt .22, \$50. FR 4-3849. A  
 PLAY PEN, \$7. FR 8-1609. A  
 STOVE, Coleman camping-type, 2-burner, \$8. OS 6-6956. A  
 RECORD PLAYER, RCA Victor automatic, 45 rpm, \$20. OR 4-6093. A  
 BABY FURNITURE, Babyline birch; crib, mattress; wardrobe; \$20. FR 9-5583. A  
 PUPPY, Labrador retriever, 3-mo old male, AKC, FTC stock, \$30. TO 6-3153. A  
 CAR ACCESSORIES, top & side curtains, black, Triumph TR3, \$50. OR 2-6760. A  
 PRESSURE COOKER, Presto 12-qt, \$12. PL 5-6648. A  
 WRIST WATCH, lady's Benrus, \$25. FR 5-5298. A  
 PLYMOUTH, 1948, \$50. FR 2-9412. A  
 HOUSEHOLD FURNISHINGS, windows, 11, various sizes, \$10; clock, 400-day-type, \$5. PL 5-8650. A  
 BABY EQUIPMENT, swing, \$7; car bed, \$3.50. PL 6-5939. A  
 APPLIANCES, stove, tabletop-type 36", broiler, \$20; coffeemaker, Universal electric, 10-cup, \$10; waffle iron, Dominion, \$12. OS 6-0326. A  
 HUDSON, 1950 Pacemaker, \$50. FR 4-6687. A  
 TV PICTURE TUBE, 24AP4 24" round, cost \$99. \$45. GE 4-0152. A  
 TYPEWRITER, Smith-Corona standard, pica type, \$50. PL 4-7652. A  
 WASHER, Thor automatic, 2 1/2 yr old temp selector, \$40. DA 9-1838. A  
 FURNITURE, dining table, walnut, 4 chairs, \$15; family room set, rattan, bed-divan, coffee & end tables, chair lamp, \$35. FR 9-6606. A  
 APPLIANCES, refrigerator, \$35; washer, wringer-type, \$15. Box 2002. A  
 TV SET, 17", \$20. OS 5-9740. A  
 DINING ROOM SET, walnut, table w/2 leaves, 4 chairs, \$25. OR 1-6692. A  
 RANGE, aas, \$25. Box 2004. A  
 RUG, 9'x12' wool, dk red, \$30. OS 6-5033. A  
 ARCHERY BOW, Parker, 50-lb pull, 1 doz. hunting arrows, 6 target arrows, quiver, tackle, \$40. DA 6-6779. A  
 BICYCLE, boy's 26" lightweight, \$30. PL 2-9597. A  
 SOFA, 2-pc sectional, \$50. PL 6-6563. A  
 WASHER, Kenmore wringer-type, timer, \$25. OR 2-7081 after 9 p.m. A  
 TIRE, 7.60x16, w/tube & wheel, \$10. DA 6-5566. A  
 FISHING POLE, 12' deep sea-type, reel, \$17. DA 4-6748. A  
 GOLF CLUBS, Robert Jones matched set, 9 irons, 4 woods, bag, \$45. FR 9-9788. A  
 RECORD PLAYER, 3-speed table model, \$30. PL 6-3439. A  
 GOLF CLUBS, MacGregor Tommy Armour, irons 2-9, putter, chipping iron, bag, \$40. EX 5-7772. A  
 APPLIANCES, refrigerator, Norge, \$30; washer, Easy, \$20. DA 4-5532. A  
 BED, junior-size, \$10. OS 6-3633. A  
 CAMERA, Mycro IIA 16-mm subminiature, 3-element coated lens, shutter speeds, f-stops, accessories, \$10. FR 4-4721. A  
 PAINT SPRAYER, Buraess electric, strainer, \$5. FR 9-6601. A  
 CAR PARTS, fender skirts, 1949 Cadillac 62, \$5; steering unit, 1949-1953 Cadillac, \$5. DA 4-5824. A

### FOR SALE

FORMAL, size 9-10, ballerina length, lite green lace & net, \$20. DA 9-3869. A  
 TOOL CABINET, Craftsman, \$25. FR 4-9879. A  
 TEXTBOOK, Spanish Book One, Friedman, Arjona & Carvajal, \$1.50. Box 2003. A  
 WASHER, Maytag wringer-type, \$39.50. OR 8-8816. A  
 DE SOTO, 1942 4-dr, \$50. OR 2-2370. A  
 BICYCLE, girl's 26", \$10. Box 2006. A  
 WASHER, Maytag wringer-type, \$35. Box 2005. A  
 RADIO, hi-fi, Craftsman C500 amp, KT-66 output, chrome chassis, cost \$100, \$47.50. OR 4-0762. A

### WANTED TO BUY

AQUARIUM, w/equipment. OR 4-6816. B  
 GYM EQUIPMENT, dumbbells, DA 4-2205. B  
 CABIN CRUISER, 21', inboard, prefer Fiberglass hull, OS 9-1698. B  
 SHOP EQUIPMENT, 8" saw, jointer, FR 4-0838. B  
 RANGE, Chambers. FR 9-4453. B  
 BABY EQUIPMENT, swing set; stroller, convertible-type, canopy. GE 0-1245. B  
 CAMPING EQUIPMENT, sleeping bags, 2 double-size; air mattresses, 2 double-size. TO 2-7246. B  
 MANDOLIN, DA 3-6658. B  
 ICE CREAM FREEZER, 2-qt manual-type, wooden. OS 9-2008. B  
 TOY TRUCKS, heavy metal construction. Box 2007. B

### FOR TRADE

BEDROOM SET, blonde, Mr. & Mrs. dresser, nite stand, bookcase-head board, mattress & box spring. Trade for smaller dark-wood set, prefer 3/4-size 4-poster bed. FR 4-7213. C  
 CAMERA, Kalimar 2 1/4"x2 1/4" single-lens reflex, trade for Roliflex. FR 4-4721. C  
 TV SET, Raytheon 21" console, 4 yr old, maple, new picture tube w/warranty, trade for portable TV set. OR 4-2973. C

### FREE (to be given away)

MAGAZINES, Time & Newsweek back issues. FR 9-9616. D  
 KITTENS, part Persian. FR 6-1670. D

### RENTALS WANTED

APARTMENT, 1-bdrm, unfurnished, Hawthorne, garage, \$60 mo. OS 6-0675. F  
 HOUSE, 1- or 2-bdrm, unfurnished, yard, garage, near Northrop. OR 2-2739. F  
 HOUSE, 3-bdrm, within walk of beach, lease, max \$150 mo. EA 2-1491. F

### PERSONALS

IRONING. OR 1-5752. L  
 RIDERS WANTED, 2, trip to Iowa July 11-12. OR 1-6916. L  
 THANK YOU for the thoughtful expressions of sympathy at recent death of Karekin (Kali) Kalunian. Flowers & cards from Dept 5501 were deeply appreciated. KALUNIAN FAMILY. L

### FOR SALE OR TRADE

CAMERA, Arqus C3 35-mm, all metal, leather case, flash, \$25 or trade for telescope equipment. Box 2001. M  
 GUN ACCESSORY, target scope, Unertl 10X, mounts, \$50 or trade for drill press, tool grinder, bench lathe, guns. OS 5-9578. M  
 TACHOMETER HEAD, Stewart-Warner electric, \$15 or trade for Mustang motorcycle gas tank or similar. OR 2-7081. M

### ATTENTION - GETTER—

Weapons system capability display at recent San Bernardino industrial exhibition interests Congressman Harry Sheppard, third right, who discusses Northrop display and military projects with, from left, Mr. Kenneth P. Borgen, Naval Materiel, Washington, D.C.; Lt. Col. James G. Russell, L.A. Army Ordnance District; Maj. Gen. E. W. Anderson, commander Norton AFB; Col. Denny Redd, director San Bernardino AMA; Rear Adm. T. J. Hedding, Department of Defense.

## SCCC Awards Top Trophy to Sager Slide

Shutterbug Clark Sager, Package Engineering, recently received dual recognition of his camera adroitness.

The Southern California Council of Camera Clubs' Slide of the Year trophy was awarded Clark, an NRC Camera Club member, when his color slide was selected from approximately 300 monthly prize winners and honorable mentions. In the past year, six of his entries had been adjudged eligible for the annual competition.

The second honor accorded Clark was the SCCC Fellowship Award. This tribute is the highest conferred by the Council and is in recognition of an accumulation of 100 or more achievement points.

Sager is past president of Photo Forum Camera Club and a staff member of the Photographic Society of America record lecture program.

## Norcrafter Gal Fridays Are Execs



**TOP RANKS OF NSA CHAPTER**—The recent officer installation ceremonies of the Airborne Chapter of the National Secretaries Association arrayed the lovely and talented secretaries above. From left, Public Relations Representative Frances Shellhorn, North American; Treasurer Ruth Muccia, West Coast Tapering Company; Corresponding Secretary Shirley Korman, Fairchild Camera; Recording Secretary Laura Coonradt, Northrop; Second Vice-president Reggy O'Donnell, Inglewood Park Cemetery; First Vice-president Pat Carlberg, Northrop; President Rubye Richey, Inglewood Park Cemetery; and installing Officer Jo Ann Miller. Pat, a 12-year Norcrafter, is secretary to Paul Wierk, chief administrator, Engineering. Laura, secretary to V. O. Smith and W. E. Fellers, assistants to vice-president, Engineering, has been with Northrop for over six years.



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 6)  
 FIGUEROA & 157th ST., Gardena, Q. A. L. LANGLAND (5520-20683, ext. 2646). DA 3-3922. 2-6

(Zone 9)  
 SUSANA & CALLE MAYOR, Torrance. BILL SMOTHERM (5211-39772, ext. 1920). FR 5-2959. 2-9

(Zone 12)  
 AIRPORT & MANCHESTER, Los Angeles. MINNIE HALL (5352-50280, ext. 1508). OR 2-4489. 2-12

(Zone 13)  
 INGLEWOOD AVE. & ARBOR VITAE, Inglewood. LOUISE BOLLACKER (5352-51261, ext. 1453). OR 7-1468. 2-13

(Zone 13)  
 INGLEWOOD AVE. & PLYMOUTH, Inglewood. (Consider car pool.) JOHN VILARINO (5550-28117, ext. 2770). OR 2-0654. 2-13

7:30 a.m. — 4:15 p.m.

(Zone 4)  
 IMPERIAL & NORMANDIE, Los Angeles. LA BELLE CESERI (1421-45815, ext. 691). PL 6-2593. 3-4

(Zone 5)  
 ROSECRANS & STUDEBAKER, Norwalk. (Established car pool.) G. L. DURAN (2640-26139, ext. 2617). UN 4-7204. 3-5

(Zone 13)  
 ARBOR VITAE & FIR, Inglewood. MARIE PLEAUGH. (USAF, ext. 594). 3-13

(Zone 14)  
 PRAIRIE & QUEEN, Inglewood. HAZEL C. STEWART (9020-28073, ext. 1604). OR 1-4673. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 1)  
 SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 5-1

(Zone 4)  
 VAN NESS & 119th ST., Inglewood. AUDREY LLOYD (3114-46195, ext. 2628). PL 7-1933. 5-4

(Zone 5)  
 WOODRUFF & CARSON, Lakewood. PAUL REYNOLDS (2450-56112, ext. 1278). HA 9-6905. 5-5  
 OLIVE & AVALON, Gardena. SUSAN PINNEY (3120-52298, ext. 1559). DA 4-6705. 5-5

(Zone 6)  
 AVALON & VICTORIA, Gardena. GAYLE LINTON (3230-37529, ext. 1839). DA 9-3390. 5-6

(Zone 6)  
 CHERRY & 15th ST., Long Beach. BEN WEST (2820-52224, ext. 2777). HE 7-3686. 5-6

(Zone 7)  
 AVALON & 223rd ST., Wilmington. JANET MCBRIDE (1421-12191, ext. 691). TE 5-5198. 5-7

(Zone 10)  
 MANHATTAN AVE. & 30th ST., Hermosa Beach. SARA ANN SMITH (2420-56108, ext. 1718). FR 4-4340. 5-10

(Zone 11)  
 ANZA & 118th ST., Hawthorne. L. H. CASTLE (2440-15155, ext. 1561). OS 6-6604. 5-11

(Zone 13)  
 McLAUGHLIN & PALMS BLVD., West Los Angeles. LEONARD LEVENTHAL (3222-53908, ext. 1266). 5-13

### RIDES WANTED

8:00 a.m. — 4:45 p.m.

(Zone 14)  
 CRENSHAW & SANTA BARBARA, Los Angeles. PAT GUDGEL (3473-55897, ext. 512). 5-14

3:45 p.m. — 12:15 a.m.

(Zone 9)  
 PALOS VERDES BLVD. & SEPULVEDA, Torrance. (Consider car pool; via Hawthorne Blvd., Redondo Beach Blvd., Prairie.) J. A. DARATA (5240-16464, ext. 2002). FR 5-7441. 6-9

(Zone 14)  
 CENTURY & PRAIRIE, Inglewood. L. H. GERBER (5501-39433, ext. 2200). OR 7-0583. 6-14

### Miscellaneous — Split Shift

(Zone 10)  
 HERMOSA AVE. & 4th ST., Hermosa Beach. (Hours: 4:15 p.m.—12:45 a.m.) JILL SKEEN (9542-26073, ext. 2761). FR 2-6983. 10-10

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 13)  
 INGLEWOOD AVE. & PLYMOUTH, Inglewood. (Consider car pool.) JOHN VILARINO (5550-28117, ext. 2770). OR 2-0654. 12-13

7:30 a.m. — 4:15 p.m.

(Zone 1)  
 MANCHESTER & CRENSHAW, Inglewood. CHARLOTTE WOOLUMS (9420-27690, ext. 2151). PL 3-7484. 13-1

(Zone 5)  
 ROSECRANS & STUDEBAKER, Norwalk. (Established car pool.) G. L. DURAN (2640-26139, ext. 2617). UN 4-7204. 13-5

(Zone 8)  
 CRENSHAW & PACIFIC COAST HWY, Torrance. (Via Crenshaw or Hawthorne Blvd.) C. T. DEEDS (5231-26422, ext. 1362). 13-8

8:00 a.m. — 4:45 p.m.

(Zone 1)  
 SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 15-1  
 WESTERN & 6th ST., Los Angeles. PAUL BALDES (5503-52716, ext. 2216). DU 2-3072. 15-1

(Zone 5)  
 WOODRUFF & CARSON, Lakewood. PAUL REYNOLDS (2450-56112, ext. 1278). HA 9-6905. 15-5

(Zone 6)  
 CHERRY & 15th ST., Long Beach. BEN WEST (2820-52224, ext. 2777). HE 7-3686. 15-6

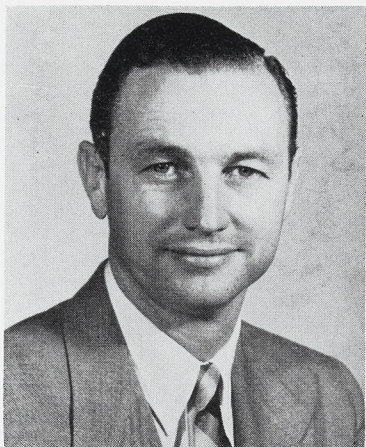
(Zone 13)  
 McLAUGHLIN & PALMS BLVD., West Los Angeles. LEONARD LEVENTHAL (3222-53908, ext. 1266). 15-13

3:45 p.m. — 12:15 a.m.

(Zone 9)  
 PALOS VERDES BLVD. & SEPULVEDA, Torrance. (Consider car pool; via Hawthorne Blvd., Redondo Beach Blvd., Prairie.) J. A. DARATA (5240-16464, ext. 2002). FR 5-7441. 16-9



# Collins Outlines Top Corporate Duties



**THOMAS V. JONES**  
Senior Vice-President



**ROBERT R. MILLER**  
Senior Vice-President



**IRVING ROTH**  
Corporate Vice-President



**RICHARD R. NOLAN**  
Corporate Vice-President

## MILLER, JONES, ROTH, NOLAN IN CORPORATE ADVANCE—NOLAN NAMED DIVISION MANAGER

Broad areas of Corporate management to be assigned to the offices of Robert R. Miller and Thomas V. Jones, elected senior vice-presidents by the Northrop board last week, have been defined by President Whitley C. Collins.

Mr. Miller, formerly Corporate vice-president and general manager of the Northrop Division, will exercise executive management in the legal, financial and general operations of the Company.

Mr. Jones, formerly Corporate vice-president for Development Planning, will exercise executive management in planning, technical development and relations with the customer.

The operating Division managers will report to the president through Mr. Miller and Mr. Jones.

As previously announced, the board also elected Richard R. Nolan and Irving Roth Corporate vice-presidents, and made Mr. Nolan general manager of the Northrop Division. Mr. Roth had been assistant to the president and will retain this responsibility.

Mr. Nolan, Northrop Division general manager, joined North-

rop when the Company was formed in 1939. Prior to being elevated to the post of vice-president for manufacturing in the Northrop Division in 1956, he successively served as manager of Production Engineering, assistant factory manager, director of service, and manager of Northrop's Anaheim facility. Mr. Nolan has been associated with aircraft enterprises since 1929. He was with the Northrop Corporation—now Douglas-El Segundo—from 1934 to 1939.

Mr. Miller joined the Company in 1951. He was elected Corporate vice-president and Division general manager in 1956, after serving as vice-president for

administration and vice-president and assistant to the president. He is also a member of Northrop's board of directors.

Formerly, he was assistant to the president of Republic Aviation Corporation and executive vice-president and director of the Menasco Manufacturing Co.

Mr. Jones joined Northrop in 1953 as assistant to the chief engineer. He was elected Corporate vice-president in 1957, after serving as deputy chief engineer and director of Development Planning.

Prior to joining Northrop, Mr. Jones was executive assistant and engineer at the Rand Corporation. (See *CORPORATE*, Page 2)

## NORTHROP

## NEWS BRIEFS

**PLANNING COUNCIL**—Northrop Planning Council has met to consider Product Planning Report No. 1 and to formulate a defined product plan together with necessary R&D and manufacturing budgets. "This plan," said Senior Corporate Vice-president Robert R. Miller, "will be for Northrop's foreseeable future and, specifically, the next fiscal year. Product plan is correctly defined as an integrated program for research and development which provides a clear delineation of product development and state-of-the-art efforts we intend to pursue." Highlighted at the meetings were (1) an important new strategic weapon system, (2) development of a prototype tactical aircraft employing boundary layer control for low drag, and (3) applications of atomic energy. Northrop's long-range studies and prime product directions include, in addition to the T-38 supersonic trainer, the Snark intercontinental missile, N-156F counterair fighter, space vehicles, manned satellites, Project BROOM, application of atomic propulsion, interplanetary systems, and other astronautical projects.

**PACE MEASUREMENT**—In response to recent briefings of key personnel, interest in the Pace Measurement program of the Manufacturing Department has been forthcoming from other segments of the Corporation. Nortronics—Hawthorne and Anaheim, Radioplane, the Corporate offices, and Northrop Division's Engineering and Finance Departments are considering Pace application to their specific needs. Richard R. Nolan, vice-president and general manager, said, "Pace measurement program has effectively aided the Manufacturing Department in the reduction of many thousands of hours that would not otherwise have been realized." . . . The program is scheduled for application to the Finance Department early next month. Other departments are considering Pace program in the near future.



**ASSOCIATE CONTRACTS** — Northrop management met at North American Aviation yesterday to confer on prospective associate contract agreements for the WS-110, the B-70 chemical bomber, and the WS-202, the F-108 long range interceptor, it was announced by John R. Alison, vice-president, Customer Relations. Attending for Northrop were Richard R. Nolan, vice-president and general manager; George F. Douglas, vice-president, Engineering; R. E. Bowditch, subcontract projects chief, Customer Relations; Bob Lloyd, manager of Manufacturing Engineering; and W. A. Steyer, project engineer, Subcontracts Project.

**COST REDUCTION** — With the first fiscal year nearly over, the Northrop cost reduction program has come through with goals basically accomplished . . . Dan H. Hill advises, "Cost targets for the first 11 months have been met and in some cases exceeded. Departments have shown a marked consistency in reducing costs and this consistency proves the soundness of the program. The downward trend of actuals closely parallels budgets set a (See *NEWS BRIEFS*, Page 2)

**TOPS IN SAFETY**—LAX Norcrafters pose proudly for photo during presentation of National Safety Council Award plaque for first place, Group "B", aircraft parts manufacturing. LAX has gone three years without lost-time accident. Plaque was for 1957 perfect record. Accepting the award are Harold Pedersen, foreman, Flight Service, and C. J. Gilbert, base administrator. Al Gordon, Safety Council, who presented the award, is center. So far 1958 also remains an accident-free year for all LAX Norcrafters.

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, July 16, 1958

## Operation Heartbeat to August 1

### John Clark To Speak on Human Factor

John B. Clark, director of Industrial Relations, will be featured speaker before the Los Angeles Breakfast Club next Wednesday, July 23.

Mr. Clark, who is nationally recognized as an industrial relations authority, will speak on the "Human Factor in Industry." Breakfast Clubbers will be told how recognition of the "human factor" has shaped Northrop's advanced industrial relations program. The talk will be broadcast on KCLA-FM at 8:30 a.m.

In its 30-year existence the rustic Los Feliz clubhouse, with

### First Funstival Picnic

(See Page 3)

Griffith Park in the background, has hosted more than 3000 distinguished speakers including presidents, governors, generals, industrial leaders, and celebrities from the sports and entertainment world.

### SIGN-UP TIME—AID, NOR-AID

Operation Heartbeat opening day has been slated for July 21. This is the annual AID and NOR-AID campaign and will extend through August 1.

Since the beginning of the AID method of charity contributions, Norcrafters each year assign a portion of their earnings to support the program of assistance to people in need—both from Northrop and from the community.

A commendable contribution record has been amassed by Norcrafters during the first three years of AID-United Givers' operation at Northrop and Nortronics Divisions.

In the first fiscal year, 1955-1956, \$229,778.73 was contributed through payroll deduction. (See *HEARTBEAT*, Page 2)





## Management Courses

**NEW GRADS** — William L. Aldrich, assistant director,

Industrial Relations, addresses group of management course graduates. Certificates were awarded to 450 Norcrafters who completed curriculum approved by Northrop and State Board of Education.

**FIRST WOMAN GRAD** —

Mary J. Sommer, Engineering Library, became the first woman to complete the basic management courses. She receives certificate from Mr. Aldrich. Dave Lewis, supervisor, Management Training, is on the right.



## NEWS BRIEFS

(Continued from Page 1)

year ago." The cost reduction program will continue. Budgets for 1958-59 are in process and will reflect goals for the coming fiscal year.

**ARMY PROJECTS**—Tony Demetriou, Northrop representative, Army Redstone Arsenal, Huntsville, Alabama, reported to Development Planning in Hawthorne last week on long-range Army objectives in missiles and space projects. The Hawk program, the RP-76 rocket-powered drone and the RP-77 turbo-propelled drone or target missile are currently being technically administered at Huntsville. . . . Arrangements are being made for General Medaris to visit Hawthorne in the near future to see the Northrop complex as a followup of Northrop top management visit to Huntsville. (See News Briefs 2 July.) Demetriou reported favorable reception of visit by General Medaris who expressed interest in Radioplane target drone program and Nortronics capability. Discussion covered the general high cost of missile systems and Northrop approach in providing economic feasibility. Northrop cost reduction program was impressive.

## Snark Models Go Around The World, Hit Targets

Tens of thousands of SM-62 Snark models are speeding on their way to targets throughout the world.

And it is not secret that some have already landed in Africa, far beyond Ascension Island.

Interesting aspect is that Snark models depart in sequence from the real thing since they are assembled after they hit their target—for model targets are air-minded youngsters and grownups all over the world.

The model is the Revell scale plastic-model hobby kit and faithfully reproduces the intercontinental Snark in scale and detail.

Revell personnel worked closely with Northrop public relations and engineering people to be certain of model authenticity.

Revell Snark kits are on sale to Norcrafters at the Personnel

Service Tool Store near Plant One.

## Corporate—

(Continued from Page 1)

tion, Santa Monica. He has also served as a consultant and professor with the Brazilian Air Ministry. Previously, he was with the engineering department of the El Segundo Division of Douglas Aircraft.

Mr. Roth was appointed assistant to Mr. Collins in 1956. Prior to joining Northrop, he was chief of the aviation branch in the office of the Secretary of Defense for five years.

He is a recognized authority on aircraft fiscal matters, and represented the Department of Defense in reconstituting the Japanese aircraft industry.

## Heartbeat--

(Continued from Page 1)

The sum of \$262,922.79 was donated in 1956-1957 and, for the first 11 months of the 1957-1958 fiscal year, \$275,618.27 was allocated to the participating charities of the United Givers program.

The NOR-AID record of help in time of need is also outstanding. Since September 1955 when the first funds were disbursed, over 650 Northrop families have been assisted.

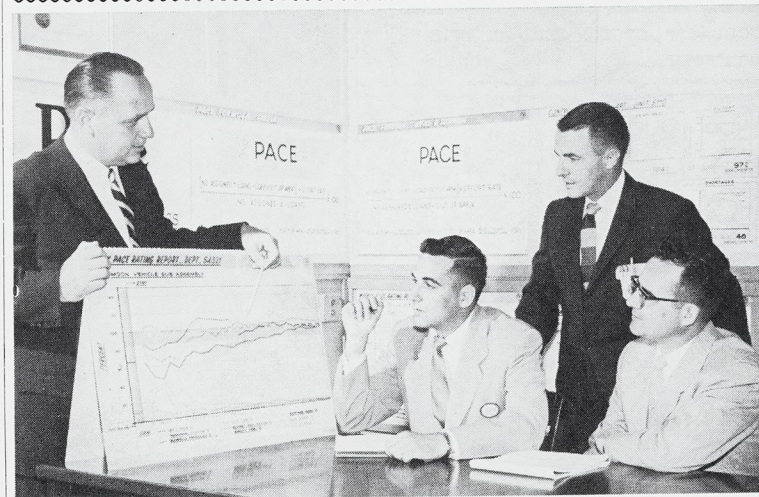
One of the principal reasons for the widespread participation in these programs has been the contributor's option of choosing any one of over 3000 authorized charities in America.

Another striking factor in favor of AID contributions is distribution cost—lowest in the history of collective giving. Administrative costs of AID are four cents on each dollar collected. According to Mal Mountain, Personnel Activities, the average fund-raising cost of other agencies is in excess of 13 cents for each dollar contributed.

During Operation Heartbeat, organization clerks will contact Norcrafters, with complete information on contribution schedules. The "standard of giving" has been generally established at 12 minutes of pay per week.

It is also the period when those who choose to designate a specific charity may renew their designations for the coming year—a requirement under AID.

For those who are not AID participators, Operation Heartbeat is an opportunity.



**BOEING STUDY**—A team of industrial engineers from Boeing Airplane Co., Renton, Washington, came to Hawthorne recently to study Northrop's pace measurement program. Cost reduction program is explained by D. N. Petersen, chief methods engineer, assisted by R. M. Wrestler. Boeing men seated, from left, are R. J. Taller and M. B. Mitchell, both Transport Division. Chart progress.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Items advertised in "For Sale" and "For Sale or Trade" categories are limited to a maximum of \$50. Price must be stated.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish

calls. Replies to box numbers are to be in writing. Box number replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

### FOR SALE

CHILDREN'S CLOTHING, girl's, sizes 4-6, teddy bear coat, dresses, skirts; boy's sizes 6-18 mo, suits, others; from 50¢. FR 9-9616. A

TEXTBOOK, Spanish Book One; Friedman, Ariona & Carvajal; \$1.50. Box 2106. A

CHILDREN'S FURNITURE, table & chair, converts to desk, cost \$45, \$15. OS 6-9621. A

SWING SET, 2 swings & alider, \$18. TH 2-1527. A

HOUSEHOLD FURNISHINGS, drapes, 2 pr, aqua 3'x6' pleated, \$15; lamp shades, 2, dk green oriental-type, cost \$40, \$15. UN 8-1223. A

HEARING AIDS, Sonotone 977, \$15; Zenith Royal, \$10. FR 4-4140. A

BUGGY, folding-type, pad, cost \$30, \$10. FR 2-6776. A

CAMERA, Keystone Capri, f:1.9, \$30. OS 5-1628. A

RANGE, Tappan, gas, 10 yr old, \$30. EX 7-1954. A

SLEEPING BAG, w/rubberized fabric air mattress, \$10. FR 9-0706. A

HAM EQUIPMENT RACK, 19"x6', \$15. OR 8-8326. A

MOWER, Craftsman 18", \$10. FR 7-1844. A

MUSIC CENTER, Philco radio-phonograph, mahogany, \$45. WE 5-6824. A

GOLF CLUBS, J. C. Higgins Expert Model 50, irons 2-9, sand wedge, putter, \$40. DA 9-1053. A

TYPEWRITER, Underwood, \$40. EX 1-4860. A

CAR PARTS, tires & tubes, 6, 6.00x16 recaps; wheels, 5, 1937 Plymouth 6.00x16; \$25. Box 2102. A

BED DIVAN, rose beige, \$50. OR 7-7066. A

BICYCLE, Schwinn 28", balloon tires, spring & locking-type front fork, cost \$85, \$25. Box 2101. A

DESK, mahogany, 7-drawer, \$20. FR 9-5088. A

DRUM, metal snare-type, stand, \$20. Box 2106. A

MIRROR, 48"x36", beveled edges, \$25. GL 4-7689. A

STUDIO COUCH, \$15. WE 8-7653. A

WHEEL CHAIR, E-J collapsible, \$40. LO 9-3624. A

WASHER, wringer-type, \$25. FR 6-8134. A

ELECTRIC GUITAR, amplifier, \$30. FR 9-5053. A

### FOR SALE

ROLLER SKATES, woman's size 6 1/2 shoe-type, \$10. PL 9-6238. A

ROASTER, Westinghouse electric, cabinet, timer, \$25. DA 9-1019. A

RANGE, Kenmore apt-size gas, yr old, \$40. FR 8-2703. A

CAR PARTS, 1934 3-window coupe body & frame, \$30. UN 5-4654. A

PUPS, dachshund-mixed, \$5 ea. HA 5-3565. A

### WANTED TO BUY

REFRIGERATOR, 12 yr old or less, \$25. RI 8-3379. B

TRICYCLE, small. FR 5-7822. B

WHEEL, MG-TD, w/hand crank. Box 2103. B

MODEL PLANE ENGINE, O&R 29 glow-plug-type. DA 9-4286. B

AWNING, for 15' trailer, w/cabana. OR 1-2058. B

### FOR TRADE

BICYCLE, boy's 26" racing-type, trade for 24"-26" girl's bicycle. ME 3-2990. C

CHEVROLET, 1957 station wagon, trade equity for 1953-1954 car. OS 5-3235. C

HOUSE, 3-bdrm, trade \$500 equity. TE 4-7305. C

### LOST

RING, Elk-type, reward. FR 8-1753. J

VOLTAGE REGULATOR, Square D 5008, southwest section of Plant 3. DA 9-7306. J

### PERSONALS

RIDE WANTED, New York City area, share expenses. Box 2104. L

RIDERS WANTED, Minneapolis Sept. 10, share driving & expenses. FR 6-9212. L

THANK YOU for the flowers, help and sympathy at the death of my mother, Goldie J. McGrew. BEVERLY J. MCGREW. L

GIRL MUSICIANS WANTED, pianist, accordionist, drummer, weekend work. FR 2-0502. L

### FOR SALE OR TRADE

MOVIE CAMERA, USN 16-mm magazine-type, \$40 or trade for shop equipment. Box 2105. M



Vol. 16

Northrop Field, Hawthorne, Calif.

No. 21

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CHARLES BARR, Director

CHARLES BRADFORD, Editor

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## NRC Equestrians Prance to First In Redondo Ride

The smartly parading equestrians of the NRC Riding Club jockeyed their way to top place in the July 5 Redondo Beach Neptune Day Parade. Western Mounted Division.

According to Bob Brenton, commissioner, 14 reinsmen took part in winning this trophy.

Events scheduled for the Riding Club are the Torrance Parade, July 26; Hawthorne Days Parade, August 2; and the Annual Sheriff's Rodeo, August 31. Tickets for the latter event are available at Personnel Activities and Services, Plant One, extension 2784.



# SPORTS

The Northrop News



## RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 4)  
SAN BERNARDINO FRWY & TOWNE, Pomona. (Desire car pool.) E. O. HILTON (5568-2251, ext. 2745). NA 4-2520. 2-4

(Zone 8)  
WESTERN & 25th ST., San Pedro. (Desire car pool; have C decal.) LEO LA PUMA (5235-54899, ext. 2171). TE 3-2293. 2-8

(Zone 9)  
PACIFIC COAST HWY & AVE. C, Redondo Beach. H. P. RUTTER (5411-16945, ext. 1491). FR 5-7280. 2-9

(Zone 13)  
FALLBROOK & VANOWEN, Canoga Park. VERONICA STOCKARD (5353-16242, ext. 2202). DI 7-4200. 2-13

7:30 a.m. — 4:15 p.m.

(Zone 4)  
CITRUS & SAN BERNARDINO FRWY, Covina. (Consider car pool.) R. J. HALLOWELL (8920-55894, ext. 1564). ED 2-4409. 3-4

(Zone 7)  
AVALON & CARSON, Torrance. S. F. HART (1310-41792, ext. 1801). TE 5-9472. 3-7

(Zone 8)  
WESTERN & 237th ST., Torrance. J. F. KISSEL (4700-28503, ext. 1986). DA 6-8747. 3-8

(Zone 14)  
PARK & 67th ST., Inglewood. JOE SING (5160-62621, ext. 1956). OR 1-2962. 3-14  
CENTINELA & FREEMAN, Inglewood. (Consider car pool.) IDA HOLLANDER (USAF, 1652). OR 4-1247. 3-14

8:00 a.m. — 4:45 p.m.

(Zone 1)  
ADAMS & VERMONT, Los Angeles. (Desire car pool.) J. D. SKYLES (2450-56126, ext. 1278). RE 4-8594. 5-1  
SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 5-1

(Zone 4)  
BEVERLY & ROSEMEAD, Montebello. (Consider car pool.) G. E. KOPP (9420-42940, ext. 1416). PA 8-4735. 5-4

(Zone 6)  
VERMONT & 169th ST., Gardena. (Desire car pool.) THOMAS E. COLLINS (3620-51325, ext. 1870). DA 3-3621. 5-6  
CHERRY & PACIFIC COAST HWY, Long Beach. (Desire car pool.) B. V. WEST (2822-52224, ext. 2777). HE 7-3686. 5-6

(Zone 8)  
ARTESIA & AVALON, Gardena. GAYLE LINTON (3230-37529, ext. 1909). DA 9-3390. 5-6

(Zone 13)  
CRENSHAW & 182nd ST., Torrance. (Desire car pool.) LAWRENCE MARKS (3275-49542, ext. 459). DA 3-4932. 5-8

(Zone 10)  
HERMOSA AVE. & 17th ST., Hermosa Beach. ROSEMARY L. PENNY (3120-48588, ext. 2535). FR 2-0625. 5-10

(Zone 13)  
SEPULVEDA & VENTURA, Sherman Oaks. (Desire car pool.) R. S. TAYLOR (2450-56130, ext. 1278). ST 4-1320. 5-13

## RIDES WANTED

3:45 p.m. — 12:15 a.m.

(Zone 1)  
VAN NESS & 67th ST., Los Angeles. RUDY LONGFELT (5512-21859, ext. 2568). PL 3-6191. 6-1

(Zone 4)  
IMPERIAL & OLD RIVER SCHOOL RD., Downey. ARTHUR J. MAY (9630-53037, ext. 1929). TO 1-7965. 6-4

## Miscellaneous — Split Shift

(Zone 4)  
AMELIA & GLADSTONE, San Dimas. (Desire car pool; hours: 4:15 p.m.—12:45 a.m.) BETTIE KENYON (2550-34652, ext. 2541). 10-4

(Zone 14)  
BRONSON & SUNSET, Hollywood. (Hours: 4:15 p.m.—12:45 a.m.) ED McDONNELL (9542-46320, ext. 2228). HO 4-7652. 10-4

## RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 4)  
SAN BERNARDINO FRWY & TOWNE, Pomona. (Desire car pool.) E. O. HILTON (5568-2251, ext. 2745). NA 4-2520. 12-4

(Zone 8)  
CRENSHAW & LOMITA BLVD., Lomita. J. K. AUBRY (7735-27048, ext. 2369). 12-8

(Zone 14)  
WESTERN & 25th ST., San Pedro. (Desire car pool; have C decal.) LEO LA PUMA (5235-54899, ext. 2171). TE 3-2293. 12-8

7:30 a.m. — 4:15 p.m.

(Zone 4)  
CITRUS & SAN BERNARDINO FRWY, Covina. (Consider car pool.) R. J. HALLOWELL (8920-55894, ext. 1564). ED 2-4409. 13-4

(Zone 5)  
MILLER & ORANGETHORPE, Buena Park. (Via Artesia.) E. W. MYERS (9420-55979, ext. 2151). 13-5

(Zone 14)  
CENTINELA & FREEMAN, Inglewood. (Consider car pool.) IDA HOLLANDER (USAF, ext. 1652). OR 4-1247. 13-14

8:00 a.m. — 4:45 p.m.

(Zone 1)  
ADAMS & VERMONT, Los Angeles. (Desire car pool.) J. D. SKYLES (2450-56126, ext. 1278). RE 4-8594. 15-1

(Zone 4)  
SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 15-1

(Zone 4)  
BEVERLY & ROSEMEAD, Montebello. (Consider car pool.) G. E. KOPP (9420-42940 ext. 1416). PA 8-4735. 15-4

(Zone 6)  
VERMONT & 169th ST., Gardena. (Desire car pool.) THOMAS E. COLLINS (3620-51325, ext. 1870). DA 3-3621. 15-6

(Zone 8)  
CHERRY & PACIFIC COAST HWY, Long Beach. (Desire car pool.) B. V. WEST (2822-52224, ext. 2777). HE 7-3686. 15-6

(Zone 13)  
CRENSHAW & 182nd ST., Torrance. (Desire car pool.) LAWRENCE MARKS (3275-49542, ext. 459). DA 3-4932. 15-8

**OPEN CIRCLE**—Glibness of tongue is not a requirement for Toastmaster affiliation. So assert the Nor-Air Toastmasters 1398 executive officers, Treasurer Jay Raynor, President Ernie McNeil, Educational Vice-president Len Hauter, Publicity Director Jack Miller, Sergeant-at-arms Ray Oakes, Secretary Ray Brady, and Paul Vido, the administrative vice-president.

## Diamond Derring-do Sparks First Round League Play

First round softball standings indicate that hustling ballplayers abound in the various Northrop NRC nines.

The top rung in the American League is shared by the Dodgers and the 5400 team, both sporting 4-and-1 records. Still in contention are 2841's diamonders, whose won-lost column shows 3-and-1.

The Dodgers moundsman is Greg Halberg and the 5400 hurler is Paul Farley. Wielding the big AL stick is 1400's Arnie Acelrod with a .500 bat mark.

The National League is dominated by the 4-and-1 chalked up by Mariposa, with Dave Heaps on the hill. K. J. Iguchi of the Hustlers has connected safely more often than not for a .555 average and Mariposa's Mike Thayer is right at his heels with .545.

The Loopers, a Pacific Coast League team, control their division with a 6-and-1 standing. However, the 3373 nine haven't yet taken the third strike—their record is 5-and-1. Tossing them in for the Loopers is Jack Augst. Batting king of the

## RIDES OFFERED

8:00 a.m. — 4:45 p.m.

(Zone 13)  
SEPULVEDA & VENTURA, Sherman Oaks. (Desire car pool.) R. S. TAYLOR (2450-56130, ext. 1278). ST 4-1320. 15-13

4:45 p.m. — 1:15 a.m.

(Zone 5)  
HARBOR & HAZARD, Garden Grove. (Via Hwy 39, Carson, Artesia.) ARTHUR L. BURTON (5233-45341, ext. 2002). JE 1-2414. 18-5

## Miscellaneous — Split Shift

(Zone 4)  
AMELIA & GLADSTONE, San Dimas. (Desire car pool; hours: 4:15 p.m.—12:45 a.m.) BETTIE KENYON (2550-34652, ext. 2541). 20-4

## Holidayland Funstival — Company-wide Frolic

In the vernacular of show biz, plans for the first Northrop NRC interdivisional picnic indicate a socko, swinging affair.

On August 10 at 10 a.m., the clambakers will storm the gates of Disneyland's Holidayland. For this, the first Company-wide gala, sizeable contingents from all three Divisions—Radioplane, Northrop and Nortronics, both Anaheim and Hawthorne — are expected.

Funstivities will open with an exhibition softball game between teams representing Radioplane and Nortronics Anaheim. The victor will then engage an all-star nine from Hawthorne, vieing for the NRC Funstival trophy.

Home-packed basket lunches will be the order of the day, although hot dogs, hamburgers and other goodies will be available at the park. And, to wet the whistles of rooters and sideline umps, the Northrop Recreation Club will provide free coffee, orangeade and lemonade to Norcrafters—all you can drink, all day long.

Among the games and contests for the young in heart—all sizes—is a snapshot contest open to all. Competition particulars will be in the July 30 Northrop News.

Scheduled for the afternoon program in the king-size candy-striped tent is a concert by the renowned Disneyland Band, under the direction of Vesey Walker. Also on tap are the Disney-

land Golden Horseshoe stars, including Donald Novis, Wally Boag, and Slue-Foot Sue, singer of the ballads of the Nineties.

Junior Norcrafters, especially, will be entertained by Roy Williams of the famed Disneyland Mouseketeers, the Disneyland Indians, and the Gonzales Trio.

The NRC Square Dancing Club will give a demonstration on how to "swing y'r partner round and round" and, between the hours of 4 and 6, all Norcrafters may rock to the solid beat of the Disneyland Jazz Band.

And all the splendid vistas of Disneyland itself are open in the afternoon to Norcrafters at special admission rates.

But to the Funstival, no tickets are required. Formal invitations will accompany Friday's pay checks. All that will be necessary for entrance is this invitation and Northrop ID card.

Norcrafters are requested to limit guests to the members of their families only. Anticipated participation precludes the invitation to friends.

Included with Friday's invitation will be an NRC decal for auto parking identification.

## Chessmen Are No Pawns—Kings of Plant Tourneys

For three months the NRC Chess Club plant-wide tourneys have been whittling down chess masters from the original 76 duellists.

Five plant champions stand on the threshold of claiming the gambit game crown: Bill Henderson, Plant One; George Holmes, Plant Two; Tom White, Plant Three; Walt Cook, Building Eight; and Marvin Westcott, Engineering Center.

The Hawthorne Grand Master chess-offs are now in progress.

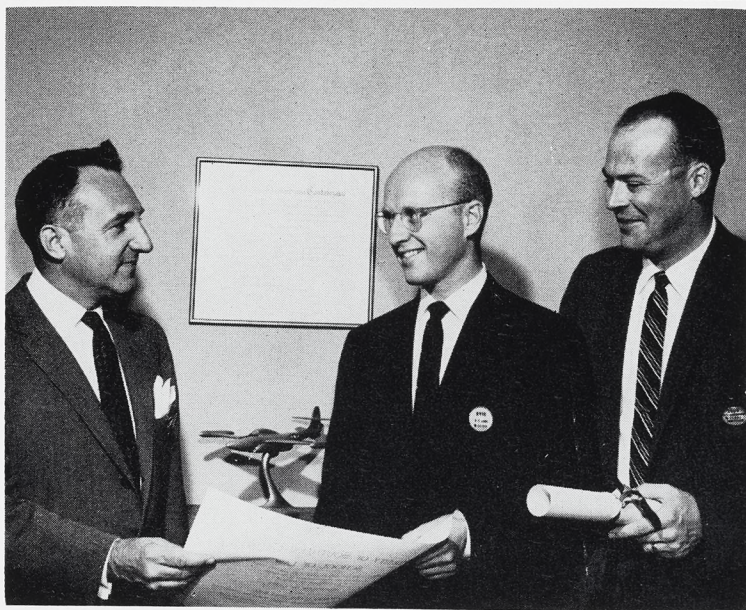


**CORBINA COPS TOP**—The now-tamed 2½-pound corbina shown above was bested by 12-year-old Peggy Roth, whose pop is Woody, McDonnell Project. Peggy's catch netted her the annual Kids Day trophy. Chomping his perennial seagar is John Pawlicki, NRC Surf Fishing Club commissioner. On John's left is R. E. Fisher, winner of the June Novice trophy. And, wagging an admonitory finger at some fish story, is H. T. Outland, who has been awarded monthly trophy. Events are NRC sponsored.

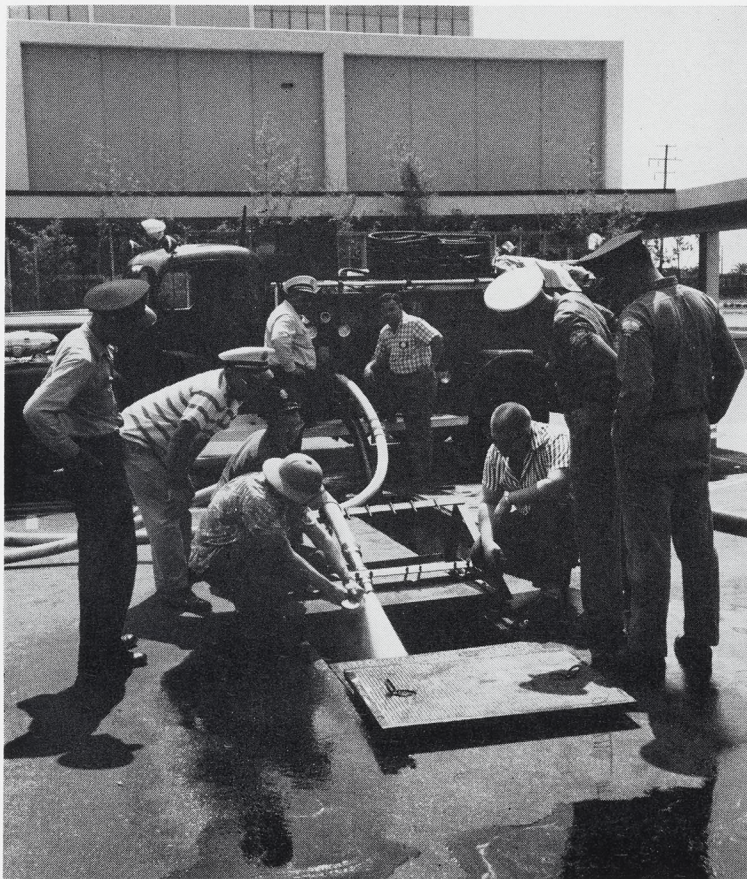
fall kegling starts  
week of  
september 7—  
all leagues  
**bowlers**  
single and team  
entry forms at  
personnel activities  
deadline—august 12



# Northrop News Pictorial



**LEGAL MINDS**—Two diligent Norcrafters earned their law degrees taking night courses at the University of Southern California. From left, George Gore, secretary of Northrop Aircraft, Inc., and general counsel of the Northrop Division, congratulates Robert E. Ames, Contracts Administration; Ron Swearingin, Nortronics Public Relations.



**FIREFIGHTERS SHOW STRENGTH**—Top quality of Northrop Fire Service men and equipment was proved out in capacity tests run by the Board of Fire Underwriters of the Pacific. Standing, from left, are Northrop firemen L. A. Iardella, Captain L. S. Conley, Captain L. G. Baldini, Chief J. H. Bartlett; and Hawthorne fire captains R. L. Brander and W. J. Korf. Kneeling, from left, are Henry Moorehead, in charge of tests, and Norcrafters C. S. Akers and E. P. Dalton. Tests showed that fire truck pumps better now than when it was new—result of regularly scheduled maintenance done by the firemen themselves.



**WATERPOWER**—Captain L. G. Baldini regulates water flow as E. P. Dalton and C. S. Akers test deck gun. Gallon-per-minute capacity of truck was highly rated.



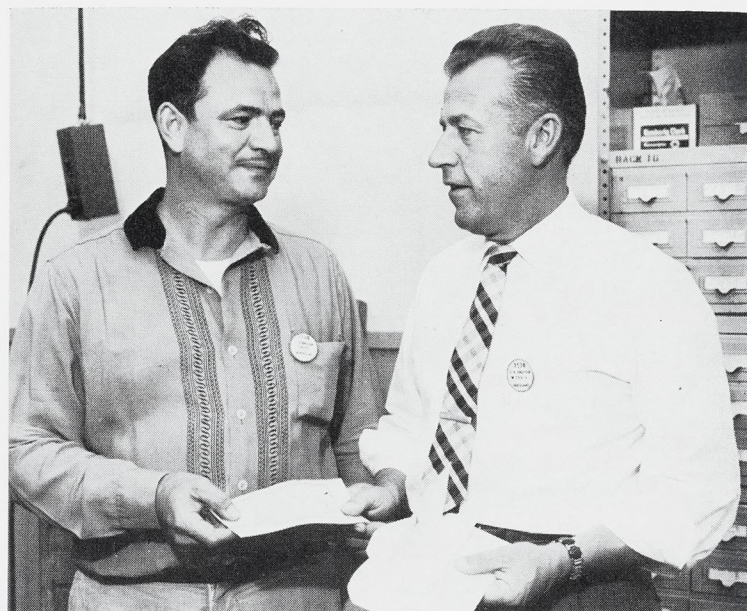
## Nortronics \$\$\$ Ideas



**BLOCK OF ALUMINUM**—Nortronics' Harry Sullivan, right, netted \$10 by simple expedient of suggesting aluminum blocks in place of shims for positioning Snark magnetic tape assembly. Harry helped Nortronics write suggestion record in the past two months. Suggestion award man George Putnam, left, brings the award winning news.



**TOP AWARD**—E. L. Kennedy, center, receives check for \$875 for solving problem of Snark telemetering commutator repair. Congratulations are extended by Bill Pattison, in charge of Engineering Services, and F. W. Priest, Engineering administrator. Kennedy's repair method reduced cost per unit from \$250 to near \$25. This is the biggest Nortronics award to date.



**FOR A SWITCH**—John Gabaldon, Nortronics, figured that a soldering iron stand switch which activated when you lifted the iron was a good idea. It was — \$20 worth! Lynn Kauffold, 2530 organization head, agrees. Soldering iron had to be hot, but if charged with electric current magnetic qualities of Snark tape drum would be ruined. John's automatic switch made the job easy.

**SUPERSONIC GRAD**—Henry E. Chouteau, Northrop Engineering test pilot, was one of 15 to graduate from Experimental Flight Test Pilot School at Edwards AFB this month. Selection for this school is high honor.



## NEWS BRIEFS

**ASSET BUDGET**—The Northrop Division asset budget has been approved and is now in process of being reviewed for corporate coordination with other Divisional budgets. The budget is an austere one but provides adequate support for research and development and other necessary areas that will help increase the future sales dollar and build backlogs . . . It is hinged to firm programs. Plant Engineering plays an important part.

**MEDICAL FACILITIES**—Expansion and modernization of Northrop's hospital have been completed, it has been announced by George Gore. Hospital improvements include additional surgical equipment, a revised layout, complete air-conditioning, modern scientific lighting and painting, and 1000 additional square feet of floor area incorporating a new treatment room, filing room, storage room, and a night operating room with a 200-watt circular surgical light weighing 200 pounds.

**PLANNING COUNCIL**—Northrop's Planning Council has virtually completed spelling out specific product areas for the coming fiscal year . . . "The Council has been very objective in its considerations," stated Vice-president and General Manager Richard R. Nolan, "Details have received painstaking analysis, and meticulous attention has been given to all subjects. Council findings are a clear concise planning tool. They will be of great assistance in management decisions."

**RETIREMENT FUND**—The Chase Manhattan Bank in New York, trustee of Northrop's retirement trusts, has been instructed to purchase the first common stocks for ownership by the variable annuity fund, it was announced by Whitley C. Collins, president. At the same time a substantial amount of government bonds were purchased. Money in the fund is invested under the supervision of an Investment Board (see *Northrop News* 7 May) consisting of three members of the Northrop Board of Directors: Edward W. Carter, chairman, president of the Broadway-Hale department stores; Lloyd L. Austin, president of Security First National Bank; and Richard W. Miller, managing partner of William R. Staats and Company, Investors. A national organization of investment counselors, Loomis, Sayles, and Co., Inc., aids the Investment Board in an advisory capacity.

**ENDORSEMENT**—Ernst and Ernst, Northrop's long-standing certified public accountants, have surveyed the integrated cost control program and have issued complete endorsement, it has been announced by Dan H. Hill, Northrop Division treasurer. The auditing firm declared the program effective, realistic, correct in direction and detail, not excessive. Ernst and Ernst suggestions for betterment of controls as result of the survey were only in general and non-specific categories. Northrop's integrated cost control program is now one year old.

**FUNCTIONAL SURVEY**—Functional Survey and Analysis Committee — team consisting of Grant Macdonnell, Jack Hinchliffe and Ben Trump — has now completed its program, and evaluations have been reviewed by the general manager. The report has been forwarded to department vice-presidents for action. The Functional Survey team, at the request of the general manager, has recently covered all areas of the plant seeking out duplication, extraneous activities, unnecessary functions, unsound practices, and uneconomical services in view of the cost reduction program.

**ASSOCIATE CONTRACTS**—Following the symposium at North American Aviation, Inc., on weapon systems 110 and 202 (see News Briefs, 16 July), specific assignments were made within the Northrop Division to accomplish the requirements set forth. The concerted task force is now in the process of developing information for review by NAI management this Friday.

**TOUR OF DUTY**—John Alison, vice-president, Customer Relations, and brigadier general, Air Reserve, recently (See *NEWS BRIEFS*, Page 2)

## General Ramey Elected V-P, To Head District Offices

Beverly Hills, Calif.—Lt. Gen. Roger M. Ramey, USAF, Retired, has been elected a Corporate vice-president of Northrop Aircraft, Inc., in charge of the Company's District Offices, Northrop President Whitley C. Collins announced last week.

General Ramey will supervise the activities of Northrop offices in Washington, D.C.; Dayton, Ohio; Omaha, Neb.; Ogden, Utah; Huntsville, Ala.; and Colorado Springs, Colo. He will move to Washington from his present home in Fort Worth, Texas.

General Ramey was previously associated with Northrop as a consultant to the Company's Radioplane Division. He retired from the U. S. Air Force in January, 1957, following a distinguished military career.

The general led the 58th Bomb Wing, a B-29 unit, in the devastating fire bomb raids on Japan during the closing months of World War II. He commanded Task Force 1.5, the Army Air Force portion of the combined Army-Navy participation in the atom bomb tests at Bikini atoll in June and July of 1946.

He assumed command of the U. S. Eighth Air Force in January 1947. In July 1950 he was appointed Director of Operations at Air Force Headquarters. From 1954 to 1956 he commanded the Fifth U. S. Air Force.

At the time of his retirement, General Ramey was deputy commander of the Continental Air Defense Command and vice commander of the Air Defense Command.

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, July 30, 1958

## TO HOLIDAYLAND FOR FUNSTIVAL-!

### High Posts Announced By Nolan

F. W. (Bob) Lloyd has been elected vice-president of Manufacturing for the Northrop Division, it was announced by Richard R. Nolan, newly elected vice-president and general manager



BOB LLOYD DAVE BECK

of the Northrop Division. (See *Northrop News*, July 16.)

Bob Lloyd, long-time Norcraft, started with the Company in November 1941 as Assemblyman "C" on the N-3PB Norwegian patrol bomber contract. He worked to the top in various final assembly assignments and was made superintendent of Manufacturing Control.

After serving as assistant factory manager and general superintendent of the Factory Department, he was appointed director of Manufacturing Engineering. (See *NEW VPs*, Page 2)

### Safety Manual Issued to All NAI Divisions

Beverly Hills, Calif. — Northrop's first Corporate-wide safety manual has been distributed to personnel in all Divisions as part of the successful drive to maintain the high safety record that the Divisions have established.

"We have a good safety record, and we should be proud to maintain its excellence," said Lee B. Johnson, chief safety engineer, Northrop Division, and Corporate consultant to all Divisions on Safety Engineering.

Northrop Division has won 26 national awards for safety efficiency, including the top National Safety Council Award of Honor, the U.S. Department of Labor award of safety achievement, and the grand sweepstakes for having the safest fleet of company cars and trucks. Latest award was the LAX safety award. (See *Northrop News*, July 16.)

Among the awards earned by Norcrafters are the National Safety Council award of honor for improving its own safety record during the year, and the Greater Los Angeles Safety Council Industrial Award.

(See *SAFETY*, Page 2)

From Northrop Recreation Club Funstival headquarters come more details of the funstivities planned for the tree-shaded lawns of Holidayland, adjoining Disneyland, August 10.

The prize list for various games and contests includes a portable television set, Schwinn bicycles, Hoffman Solaradio, triecycles, and "Mr. and Mrs." electric razors.

The scene of all this excitement will be the first Corporation-wide gala—announced in the July 16 *Northrop News*. Free to personnel of all Divisions in the Northrop family — Radioplane, Norcrafters and Northrop — the funstivities are scheduled from 10 a.m. to 7:30 p.m.

**Admission to Disneyland is not included as part of the Funstival, although a special gate to Disneyland will be open later in the day at a nominal entrance fee.**

Top award in the snapshot contest, slated to run all day, is a Polaroid Land camera. The amateur lensman adjudged winner of the second prize will take home a Schwinn bicycle and third prize winner, an Eastman Pony 4 camera. Copies of the simple contest rules may be picked up in the contest booth at NRC Funstival headquarters on the grounds. But

(See *FUNSTIVAL*, Page 3)

### Funstivities...

- 10 a.m.**  
Family Funstival Welcome  
Gates Open
- 11-1**  
Funstival Softball Tourney
- 1-2:30**  
Games and Contests
- 2:30-2:45**  
Disneyland Concert Band
- 2:45-3:15**  
Golden Horseshoe Show
- 3:15-3:30**  
Roy Williams' Chalk-talk
- 3:30-3:50**  
Disneyland Indians
- 4-4:30**  
NRC Square Dance Club  
Exhibition
- 4:30-6:30**  
Dancing—Disneyland Jazz  
Band
- 7:30 p.m.**  
Funstival Closes

### NORTHROP RECREATION CLUB

NORTHROP FAMILY

"FUNSTIVAL"

SUN, AUG. 10th, 1958!

FREE!

• Refreshments • Show • Dancing  
• Games • Prizes • Awards  
pack a basket lunch and bring the whole family

### Record Magnesium Hanger Built by Advanced Tool Fab

The portable magnesium hanger now being built near the

### NORCRAFTERS GO TO GE SCHOOL ON T-38 ENGINE

Five Norcrafters traveled recently to Lynn, Massachusetts, to attend a 6-day familiarization course on the General Electric J-85 engine, which will be installed in the T-38 Trainer.

Returning with certificates from the General Electric Product Service Training School were Lyle Washburn, Experimental Flight Test; Sam Hamilton, Power Plant Design; John Johnson, Engineering Test; Ray Ververka, Engineering Laboratory Services; and Karl Bohn, Power Plant Design.

Countdown Facility will be the largest magnesium structure in the United States.

Fuel calibration, assembly and checkout operations, and maintenance work on the Snark will be performed under the new structure which will protect the missile and its operating personnel from the effects of adverse weather.

R. H. Wallen and Howard Stoten, foremen of Advanced Tool Fabrication, are supervising construction of the hangar.

Magnesium is the lowest density structural material available in tonnage quantities at prices competitive with aluminum and steel. The lightweight tubing gives the hangar its easy portability.



## NEWS BRIEFS

(Continued from Page 1)

completed two weeks' active duty tour with his command, the 452nd Troop Carrier Wing. Mr. Alison and the 452nd staged at their home base, the Long Beach Airport, and then flew C-119s to Boise, Idaho, where complete training exercises were conducted.

**NUMERICAL CONTROL**—On request of the U. S. Naval Bureau of Aeronautics and Douglas Aircraft Co., Inc., Northrop recently hosted a top level team from Douglas-El Segundo, and the Naval Bureau. The Douglas group was headed by H. G. Hynd, vice-president and general manager, accompanied by Captain R. M. Gibbons, Bureau of Aeronautics Douglas representative; Commander W. S. Tenhagen, Bureau of Aeronautics General Representative Office (BAGR), Western District; and Mr. F. R. Carlin, contract specialist, BAGR. The group came to view Northrop's advanced numerical control and data processing equipment and to obtain first-hand information on progress being made in the numerical control field.

## Factory Beats Schedule on F-89 Scorpion Landing Hook

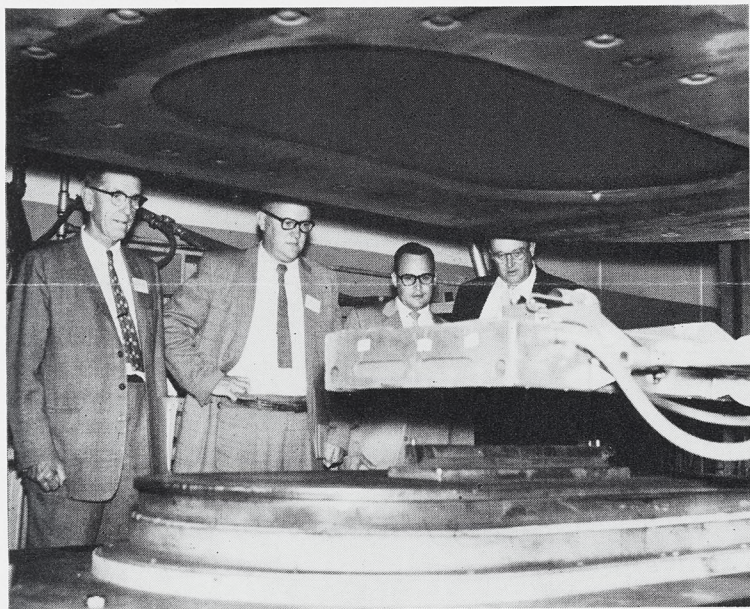
Northrop Manufacturing scored another production triumph this month when all landing hook installation kits for the F-89J Scorpion were delivered to the Air Force a full month ahead of schedule.

This additional safety flight item which incorporates a runway barrier feature for the Scorpion was given top priority by the Air Force. Prime consideration was given the F-89J airplane, which is armed with the lethal

Genie nuclear rocket.

The skilled Norcrafters in Machine Shop using advanced production equipment were responsible for the record-time delivery. General Foreman H. J. Hopkins supervised machining of the forgings and castings for the runway barrier installation kit, whose three major components are the trigger, guide and hook.

Landing hook kits for the F-89D and F-89H airplanes are now being produced.



**STEEL FABRICATORS**—Some 53 members of the Ornamental and Steel Fabricators Association came to Northrop recently interested in new airframe fabricating processes. From left, Wayne B. Jackson and Al Koopman, Jackson Iron Works, and Bernard Skerba, Western Ornamental Iron Works, speak with Joe Haggins, Manufacturing R&D, about this special Northrop high-speed radiant-heat stamping operation for forming exotic metals.

## Aircraft Monitoring Unit Computes Take-Off Capability, Signals Pilot

A new safety device which monitors the performance of aircraft during take-off is under development at the Electronic Systems and Equipment laboratories, it was revealed by Fred Stevens, operations manager.

He described the system as a practical solution to the problem of monitoring the performance of military and commercial aircraft during the take-off roll.

The take-off monitor system is a compact, universal ground-based system which gives a continuous visual indication of take-off capability to the pilot from the moment of brake release.

Operation of the systems is initiated by the tower operator at the pilot's request. Aircraft type and gross weight are set into the field unit computer from the tower and the system is activated.

There is automatic display data to the pilot, for example,

F-102, 25600 weight, 4100 feet of runway. Then the pilot starts his take-off roll.

Data on atmospheric conditions affecting take-off capability is fed into the computer from a metro unit located adjacent to the runway. Doppler radar located in the field unit locks on the aircraft and continuously feeds signals to the computer. These signals are proportional to aircraft position, velocity and acceleration.

From this data, the computer determines take-off capability of the aircraft during the entire run. In the event that flying speed will not be reached, there is an immediate visual indication to the pilot in the form of signal lights located along the runway.

Since the system is entirely ground based there is no weight, space or power penalty on aircraft.

## Safety —

(Continued from Page 1)

Radioplane has received two certificate awards from the Pacific Employers' Insurance Company for outstanding safety record, both for the Van Nuys facility and the Holloman Air Development Center.

Safety engineers and Industrial Relations staff from all Divisions contributed data for the manual which was compiled and edited at the Northrop Division under the direction of Mr. Johnson.

## HOURLY PAID GET COST OF LIVING HIKE AUGUST 4

A cost of living increase of one cent an hour will be effective August 4 for all hourly rated Norcrafters, it was announced by Richard R. Nolan, vice-president and general manager of the Northrop Division.

The raise is to reflect a 0.4 increase in the Consumer's Price Index which reached 123.7 for the three-month period ended June 15, 1958.

## HARVEY KAY WED 50 YEARS

Mariposa Maintenance man Harvey Kay, age 71, this month celebrated his golden wedding anniversary. He married 50 years ago in Patterson, New Jersey.

Harvey came to the West and to Northrop in 1948. He has one daughter and a 14-year-old grandson. The Kay family lives in Inglewood.

## GET SECRETARY'S VIEWPOINT FROM MAYME COLOMBO

Norcrafters Mayme Colombo introduced a new perspective at the PIRA (Personnel and Industrial Relations Association) meeting this month.

Mrs. Colombo, secretary to the assistant to the vice-president and general manager of the Northrop Division, was the featured speaker at the PIRA luncheon. Her talk was entitled, "What Do Secretaries Think of the Boss?"

She noted that a secretary is often expected to "look like a girl, think like a man, act like a lady, and work like a busy bee," and that a secretary's lot is not always an easy one. She stressed the fact that in secretarial relationships there are no substitutes for dignity and good manners.

A pleasant disposition and a good sense of humor are invaluable.

## New VPs—

(Continued from Page 1)

the position held at the time of his present appointment.

Lloyd, who is married and the father of five, lives with his family in Balboa. His interest in youngsters has led him to be a Boy Scout Leader and director of other boys' youth groups. Vacation hobbies include hunting and fishing.

David F. Beck has been appointed to Lloyd's former position as director of Manufacturing Engineering. Beck first came to Northrop in 1949 as assistant superintendent of Manufacturing Control. He entered the Purchasing Department in 1952 and was chief purchasing agent in off-site manufacturing. At the time of his present appointment, Beck was chief tooling engineer.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Items advertised in "For Sale" and "For Sale or Trade" categories are limited to a maximum of \$50. Price must be stated.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish

calls. Replies to box numbers are to be in writing. Box number replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

### FOR SALE

CHILD'S TOILET SEAT, blue plastic, adjustable, hooks on adult commode, \$3. FR 9-9616. A

DRUM, metal snare-type, stand, \$20. Box 2208. A

CAR PARTS, Edmunds custom dual manifold, 1937-1955 Chevrolet, w/air cleaner, linkage, Stromberg 97 carb, \$30. OR 2-3082. A

TRAILER, 4'x5'x3' utility-type, metal bottom, \$40. DA 9-6209. A

FURNITURE, sofa, coffee table, \$20. GA 3-1363. A

MODEL TRAIN EQUIPMENT, HO-gauge, engines, cars, \$50. Box 2207. A

SURF ROD, 9 1/2' Fiberglass, cost \$17 \$10. OS 6-5307. A

WATER SPORTS EQUIPMENT, skis, \$18; underwater camera, \$11.50. FR 8-2609. A

ADDING MACHINE, Burroughs 7-place, \$26.50. OR 4-0762. A

ENCYCLOPEDIA, 1942 Britannica, \$50. AX 4-9294. A

DOGS, German shepherd, 6 mo old, doghouse, \$10. DA 4-8377. A

RANGE, apartment-size gas, \$20. FA 8-5931. A

BICYCLE, girl's 26", 2-speed, \$7. DA 9-2856. A

PATIO TABLE, white enameled wrought iron, glass top, 4 chairs, \$40. Box 2209. A

VENETIAN BLINDS, 5, white metal, w/valances, 2, 30"x48"; 30"x36"; 36"x36"; door, 28"x42"; \$2 ea. OR 1-1581. A

TV SET, RCA 17" console, \$35. OR 4-5290. A

LITE FIXTURES, fluorescent, \$6 ea. OS 5-4729. A

LAMP, provincial 30", washable shade, \$10. FR 5-8245. A

WASHER, Kenmore automatic, w/faucets, \$50. OR 7-1281. A

MUSIC CENTER, radio-phono-recorder, 78 rpm, \$15. OS 5-9575. A

RANGE, Hotpoint electric, automatic timer, deep well, oven light, \$45. FR 6-1639. A

STUDEBAKER, 1948 Champion 4-dr, \$50 OR 7-1255 after 10 a.m. A

BICYCLE, Schwinn boy's 26", w/paper rack, \$35. FR 9-9570. A

RANGE, 4-burner, delivery & installation, \$40. OR 1-6485. A

TORCHMASTER, w/refill tank, \$30. DA 4-1021. A

RANGE, 4-element electric, \$20. FR 6-2371. A

CAR COOLER, window-mount-type, 12V fan, \$5. FR 8-2794. A

TV SET, Packard-Bell 19" console, \$50 FR 8-5001. A

TENT, 9'x9' umbrella-type, \$30. PL 5-0677. A

ADDING MACHINE, \$35. RI 8-4858. A

WASHER, Hotpoint automatic, \$45. FR 5-8550. A

CONCRETE MIXER, Sears power-type, w/wheels, \$50. FR 9-9306. A

BED, queen-size, innerspring mattress, box springs, frame, \$50. FR 9-9616. A

TELESCOPE, 42-mm, 67X-100X-200X, tripod, erector assembly, Barlow lens, \$30. PL 4-8957. A

BICYCLE, Schwinn 26", 3-speed, \$20. DA 4-4750. A

MOTORCYCLE JACKET, size 38, \$15. PL 1-2855. A

BEDROOM SET, box spring, innerspring mattress, chest of drawers, \$15. FR 4-7546. A

BABY CARRIAGE, converts to car-bed, cost \$50, \$25. TO 1-8508. A

HOUSEHOLD FURNISHINGS, RUG, 9'x12' wool, maroon, \$25; vacuum cleaner, Hoover, attachments, \$20. OS 6-5033. A

DINING ROOM SUITE, 7-pc Duncan Phyfe, mahogany, \$50. OS 5-4827. A

### WANTED TO BUY

REAR BUMPER-HITCH, 1958 Chevrolet 1/2-ton pickup. Box 2210. A

BELT SANDER, portable. DA 6-2124. B

TRAILER, for 9' dinghy, w/hitch. DA 5-0647. B

TRAILER for 12' boat. FR 5-6665. B

EDUCATIONAL TOYS, Gilbert; erector set, large; chemistry set. Box 2205. B

CACTUS, large, no prickly pears, will remove. OS 5-7340. B

TOY TRUCKS, heavy metal. Box 2203. B

MOVIE PROJECTOR, 16-mm. Box 2202. B

SHOTGUN, .410. EX 1-1121. B

PLAYER PIANO. OS 5-4305. B

BICYCLE, boy's 26", \$15. Box 2201. B

BICYCLES, 3; boy's 20", w/training wheels; boy's 26"; girl's 26". PL 6-0015. B

### FOR TRADE

BUICK, 1956 Special Riviera 4-dr, trade equity for 1953 or later model pickup. OW 1-2857. C

SKI BOAT, 15' 2-place inboard, glassed, 50 mph, trailer, trade for 16' utility inboard boat. OS 6-3319. C

### FREE (to be given away)

KITTENS, 2 mo old. OS 5-6086. D

TRAILER, flatbed-type, Model A wheels, long hitch. OR 4-8925 between 12:30 & 1 p.m. or 6 & 7 a.m. D

### RENTALS WANTED

HOUSE, 3-bdrm, unfurnished, within 2 blocks of ocean, 2-car garage, lease. FR 9-9616. F

ROOM, Hawthorne area, about Sept. 1, for young lady. Box 2204. F

HOUSE, 1- or 2-bdrm, furnished or partially furnished, secluded, sun deck or patio, fireplace, disposal, prefer beach area, max. \$100 mo. OR 4-9450. F

### CHILD CARE OFFERED

CHILD CARE OFFERED, nites, exchange for room, board & small salary, care by girl, 18, attending El Camino, permanent. Box 2204. G

### LOST

RING, man's Georgia Tech Class of 1958, Engineering Center, 1st floor. Box 2211. J

### FOR SALE OR TRADE

TUGBOAT, live-steam, radio-controlled, transmitter, receiver, \$50 or trade for 12' boat trailer. FR 5-6665. M

VACUUM CLEANER, Singer portable, attachments, \$25 or trade for 8-mm movie splicer, titler, editor, light meter, film. Box 2203. M

MOWER, Sears, \$10 or trade for camera. FR 8-5001. M

## STUDY CONTRACT ON NAVIGATION AWARDED ES&E

An engineering study contract involving "extremely advanced navigational techniques" has been awarded to Nortronics by the Wright Air Development Center, it was announced by Ross F. Miller, chief engineer, Electronics Systems and Equipment.

Work on the study will be conducted by the Advanced Development Section at Hawthorne.

**Northrop News**

Vol. 16

Northrop Field, Hawthorne, Calif.

No. 22

A NORTHROP AIRCRAFT INC. PUBLICATION

Published every other Wednesday by

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CHARLES BARR, Director

CHARLES BRADFORD, Editor

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# NRC Good Time Table-August

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, extension 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days), Jack Duer**  
Meet Wednesdays, 6:30 p.m. Archery classes now in session. Election August 30.

**ARCHERY (nights), Paul Randolph**  
Meet Wednesdays, 12:15 p.m.

**ART CLUB (days), Forrest Ayres**  
Meet in Annex Thursdays, 7 p.m. Models furnished by NRC—Jeanne Bruseaux & Ginna Carr booked for August. Sculpture classes Wednesdays, 7:30 p.m.

**ASTRONOMY (days), Jim Stowe**  
Meet 2nd & 4th Mondays, 7:30 p.m.

**BIBLE STUDY, Roy Stahl**  
Plant 1—Daily, 11:30-12:15, Tool Design Bldg.; 11-11:45, 5566 Conf. Room. Plant 11—Mondays & Thursdays, 12:12:45, Conf. Room 2. Eng. Center—Daily, 12-12:45, Reliability Conf. Room. Torrance—Tuesdays, 12:15-1, Bldg K2 Conf. Room.

**BOAT CLUB, Fred Wheeler**  
Meet 1st Wednesdays, 7:30 p.m. Night shift meets 3rd Thursdays, 2:30 p.m. Water Ski Club (days) meets 3rd Thursdays, 7:30 p.m. First Annual Midsummer Regatta August 23-24.

**BOWLING (days), Dave Carney**  
**BOWLING (nights), Charlie George**  
Apply for nite & day winter leagues at Personnel Activities.

**BOY SCOUTS, Stan Morris**  
Sea Scouts, Intermediates, Cub Scouts. All Norcrafter boys welcome.

**CAMERA CLUB (days), Fred Armstrong**  
Meet 1st, 3rd & last Wednesdays, 7:30 p.m. Stereo Slide Show August 6, 7:30 p.m.

**CAMERA CLUB (nights), John Newman**  
Meet 1st & 3rd Saturdays.

**CAMPING CLUB, Fred Brant**  
Meet 1st Mondays.

**CHESS CLUB, Bill Henderson**  
Chess exhibition by Isaac Kashdan August 2, 7:30 p.m.

**FISHING**  
Boat chartered for August 16—limited number. Make reservations at Personnel Activities.

**GEM & MINERAL CLUB (days), Raymond Cole**  
Meet last Wednesdays. Mineralogy class Thursdays, 7-9 p.m.

**GOLF (days), Ted Deguise**  
**GOLF (nights), Russ Munsen**  
Northrop Open now in progress.

**GUN CLUB (days), Carl Turner**  
Meet 3rd Wednesdays, 7:30 p.m. Pistol shoot at Torrance August 10, 2 p.m. Rifle shoot at Torrance August 24, 1 p.m.

**MIXED CHORUS, Bert Bracher**  
Meet Tuesdays, 7:30 p.m. All Norcrafters welcome.

**MODEL RAILROAD, Jack Wilson**  
Meet in Annex Tuesdays, 7-10 p.m. Visitors welcome. Need electricians, carpenters & scenic artists to help with new layout.

**PHILATELIC CLUB, Eugene Richardson**  
Meet 2nd & 4th Mondays, 7 p.m.

**RADIO CLUB (days), Andy Dolak**  
Meet last Thursdays, 7:30 p.m. Radio code class meets Wednesdays, 7:30 p.m. NRC's station is W6VPZ.

**RADIO CLUB (nights), Merwin McGrew**  
Meet last Thursdays, 1:30 p.m.

**SKEET CLUB, Dan Kawashima**  
Meet alternate Saturdays at Long Beach Dominguez Gun Club on Artesia Blvd. August 7, 16 & 30, 10:30 a.m. Trophy shoot August 16. Election August 30.

**SKIN DIVING (days), Ralph Gonzales**  
Meet 3rd Mondays, 7:30 p.m.

**SKIN DIVING (nights), Lillian Kemble**  
Meet 3rd Wednesdays, 1 p.m.

**SOFTBALL (days), Ken Klier**  
League play Mondays & Fridays at Sportsman's Park; Wednesdays at Rosecrans; 6 p.m.

**SPORTS CAR CLUB, Jack Kirkpatrick**  
Meet 2nd Thursdays, 7:30 p.m.

**SQUARE DANCING, Roy Jackson**  
Beginners class 2nd, 3rd & 4th Sundays at Gardena Barn, 15016 Daphne, 3-6 p.m.

**SURF FISHING, John Pawlicki**  
Meet 1st Tuesdays, 7:30 p.m.

**SWIMMING**  
Mondays & Wednesdays at Leuzinger Hi pool, 4-6:30 p.m.

**TABLE TENNIS, Robert Burke**  
League play Mondays & Wednesdays, 5 p.m.

**TOASTMASTERS 212 (days), John Walker**  
Meet at Western Avenue Country Club Thursdays, 6:30 p.m.

**TOASTMASTERS 1398 (nights), Sam Grutis**  
Meet at Western Avenue Country Club.

**TOASTMASTERS 2583 (days), Howard Cornelius**  
Meet at Kim's Restaurant Mondays, 6:15 p.m.

## FOR THE LADIES

**BOWLING (days), Joan Sittauer**  
**BOWLING (nights), Mary Mimnaugh**  
Apply for winter leagues at Personnel Activities.

**GIRL SCOUTS, Dallas Vasquez**  
Mariners, Intermediates, Brownies. All Norcrafter girls welcome.

**SOFTBALL, Betty Rice**  
Practice games at St. Andrews Park Tuesdays, 6 p.m.

**TOASTMISTRESS, Marge Gates**  
Meet in NRC Clubhouse Board Room 1st & 3rd Thursdays, 7 p.m.



**YOU'RE INVITED!**  
**NRC Family Funstival**  
**Sunday, August 10**

At Disneyland's  
"HOLIDAYLAND"

## Funstival —

(Continued from Page 1)  
the most important "rule" is to bring the family camera!

Other more mirth-provoking competitions have been slated—banana-eating contest for teenagers, husband-and-wife fresh-egg throw, boys' shoe scramble, and wheelbarrow race are just a few.

For approximate times of the major events see Funstivities timetable, Page 1.

To reach Holidayland, the regular Disneyland Park gates on both Katella Avenue and Harbor

Boulevard are used. (See aerial photo above.) The usual nominal parking fee will be in effect, although special parking facilities, immediately adjacent to the Funstival grounds, have been reserved for Norcrafters. Display of the NRC windshield sticker, sent out with the Funstival invitations, is essential.

For the convenience of those who may wish to leave instructions as to how they may be reached during the day, the numbers to call are MADison 6-8605 or KEYstone 3-4456. By asking for the Northrop Funstival phone, a direct line to the headquarters will be secured. Norcrafters will be paged in case of emergency.



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 3)  
CENTURY & VERMONT, Los Angeles. J. M. BARNETT (5210-13766, ext. 1365). PL 6-1898. 2-3

(Zone 8)  
ARTESIA & CRENSHAW, Torrance. M. E. MILLSAP (5503-42579, ext. 1385). DA 4-3048. 2-8

(Zone 9)  
CALLE MAYOR & PACIFIC COAST HWY, Torrance. BILL SMOTHERMON (5211-39772, ext. 1920). FR 5-2959. 2-9

(Zone 10)  
ARDMORE & PACIFIC, Manhattan Beach. (Desire car pool.) E. T. HAMPTON (3413-30626, ext. 742). FR 9-4653. 2-10  
HERRIN & MANHATTAN BEACH BLVD., Manhattan Beach. JANE F. MORRIS (5504-21660, ext. 2634). FR 9-3741. 2-10

(Zone 12)  
CENTURY & SEPULVEDA, Los Angeles. A. C. MALM (5501-17359, ext. 2200). OR 1-8356. 2-12

7:30 a.m. — 4:15 p.m.

(Zone 4)  
FLORENCE & STUDEBAKER, Santa Fe Springs. (Desire car pool.) BILL GOODWIN (9012-49408, ext. 2273). UN 4-7560.

(Zone 5)  
BROOKHURST & LINCOLN, Anaheim. (Consider car pool.) LOUIS VISSER (5231-5406, ext. 1362). PR 4-8579. 3-5

(Zone 9)  
INGLEWOOD AVE. & REDONDO BEACH BLVD., Redondo Beach. LAVERNE OLSON (9542-44317, ext. 1471). FR 6-4933. 3-9

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 5-1

(Zone 5)  
VERMONT & 139th ST., Gardena. J. L. MORSE (3249-12933, ext. 2554). 5-5  
VERMONT & 140th ST., Gardena. DORIS SULLIVAN (2822-12671, ext. 2777). DA 3-5097. 5-5

(Zone 6)  
CLARK & DEL AMO, Long Beach. JUDD BARTLING (3554-56062, ext. 1522). HA 5-7772. 5-6

(Zone 13)  
CENTINELA & LA TIJERA, Los Angeles. G. J. LINTON (3144-12555, ext. 1848). OR 1-5157. 5-13

### RIDES WANTED

8:00 a.m. — 4:45 p.m.

(Zone 14)  
CRENSHAW & SANTA BARBARA, Los Angeles. (Consider car pool.) RAPHAEL ORTASSE (3271-51084, ext. 408). AX 4-4831. 5-14

3:45 p.m. — 12:15 a.m.

(Zone 10)  
PIER & PROSPECT, Hermosa Beach. SAM F. WHITE (5449-47583, ext. 1857). FR 2-2950. 6-10

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 5)  
ARTESIA & DOWNEY AVE., Paramount. M. C. STEPHENS (5355-44922, ext. 621). 12-8

(Zone 8)  
CRENSHAW & LOMITA BLVD., Lomita. J. K. AUBRY (7735-27048, ext. 2369). 12-8

(Zone 10)  
ARDMORE & PACIFIC, Manhattan Beach. (Desire car pool.) E. T. HAMPTON (3413-30626, ext. 742). FR 9-4653. 12-10

(Zone 14)  
OVERHILL & SLAUSON, Los Angeles. ROY PERNET (5517-20193, ext. 2330). AX 3-7318. 12-14

7:30 a.m. — 4:15 p.m.

(Zone 4)  
FLORENCE & STUDEBAKER, Santa Fe Springs. (Desire car pool.) BILL GOODWIN (9012-49408, ext. 2273). UN 4-7560. 13-4

(Zone 5)  
BROOKHURST & LINCOLN, Anaheim. (Consider car pool.) LOUIS VISSER (5231-5406, ext. 1362). PR 4-8579. 13-5

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 15-1

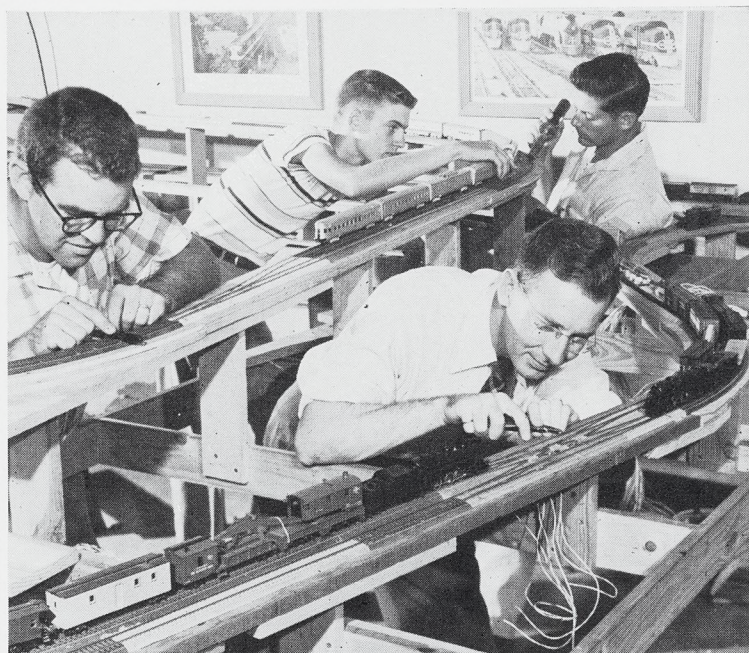
(Zone 14)  
CRENSHAW & SANTA BARBARA, Los Angeles. (Consider car pool.) RAPHAEL ORTASSE (3271-51084, ext. 408). AX 4-4831. 15-14

4:45 p.m. — 1:15 a.m.

(Zone 12)  
LINCOLN & PICO, Santa Monica. STANLEY KAMHOLTZ (5221-54891, ext. 2203). EX 3-9076. 18-12

## Rail Votaries Build in Miniature

**NRC NETWORK** — One of the "small-scale engineers" of the Model Railroad Club, Roy Eversz, at right, is gauging precisely track spacing, while Tom Brunner is assisting Jack Wilson, commissioner, in soldering connections. Cray Brown is in foreground. This new layout in the NRC Clubhouse should attract amateur railroaders who can double as electricians, carpenters and scenic artists.



## Sierra V Voted a Success by Rally Drivers, Guides

The Sierra V rally, sponsored by the NRC Sports Car Club for rallyists of other clubs, netted congratulations from the 74 competing "sports".

A night rally covering Orange and San Diego Counties for 12 hours of driving time, the Sierra V was won by Bob Piercy and his intrepid navigator, Bill Doyle, with a total error of 1 minute and 55 seconds.

Each month one sports car club in the area sponsors a championship rally comparable to the Sierra V. About 80 Norcrafters had worked on this particular event, with four months of preparation involved. Carl McCready was the rallymaster.

Sierra V is to be featured in next month's *Car Sports* magazine, with a double-page spread devoted to a pictorial account of the rally.

## Isaac Kashdan Engages 40 Chessmen in Mass Challenge

Forty boards at once—forty Norcrafters pitted against one chess mastermind.

That is the scene set for this Saturday at 7:30 p.m. Isaac Kashdan, chess editor of the Los Angeles Times, is the International Grandmaster who can thrust and parry with 40 duelists simultaneously.

Our own king of gambit, Bill Henderson, winner of the Hawthorne tourney and NRC Chess Club commissioner, will be present and a contender in the exhibition.

Second placer in the recently completed competition was Marvin Westcott, Engineering Cen-

ter, and Walt Cook, Building Eight, took third spot. These two are also expected to tax the chess ability of Mr. Kashdan.

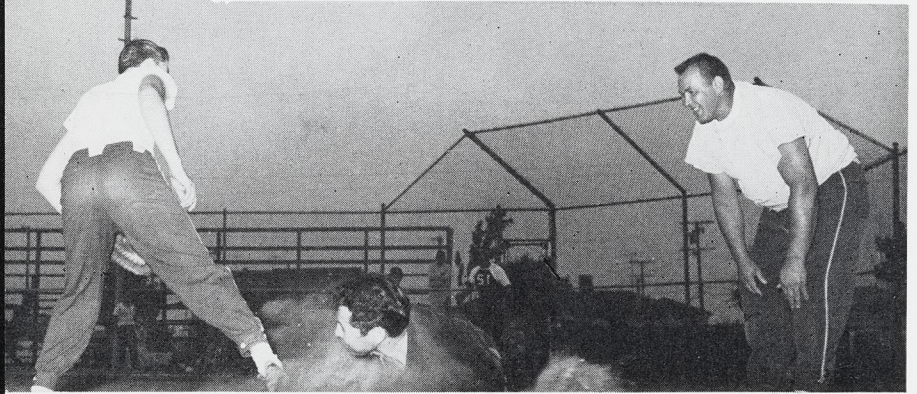
Spectators are welcome to mentally kibitz the stratagems at the boards. And for the "chess widows" a special program has been planned.

Following the exhibition, second-guessing will be punctuated by refreshments provided by the Northrop Recreation Club.

Boards are still available in this mass challenge. Reservation forms may be secured at Personnel Activities and Services, Hawthorne, Mariposa and Torrance.



# SPORTS 'SCOPE



## thru the knothole—

**BATTER UP**—Digging in to take a cut at the ball is Floyd Benedict, the oldest player in the NRC softball leagues. And Floyd has more stolen bases to his credit than many a younger man. Pitching is Don Bevans, the night league's leading pitcher and hitter.

**HEADS-UP BALL** — First baseman Ray Vandiver made Randy Edmonds' slide futile. Frank Rosenstiel is happy because he wasn't the one who "slud".

**YER OUT!**—Ump Tom White is right on top of this NRC American League play, calling Perry Cannon out. Bob Escabido had ball in time.

**LADIES' DAY**—Bess Gherna of the NRC women's league is watching the horsehide curve in. In gals' softball "man" in black is woman.

**COOL BALL** — Stripped to the waist for action is Clarence Crane. Catcher Howard Richardson just muffed peg and Clarence is safe.

**WHO'S ON FIRST?**—Checking the roster are Billy Beals and Don Greco. Various NRC American League teams are represented.

**STEAMING IT IN** — View from mound shows Don Bevans, lossless 2565 hurler, trying to whiff George Dufour. Clarence Crane is other half of the battery.



## Northrop News Pictorial

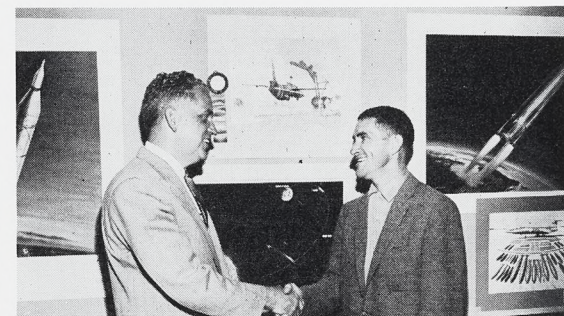
**THE WEAPON** — A close look at the Snark highlighted the week's visit of these Air Force Academy cadets to March AFB. Lt. Colonel J. C. Page explains America's first operational intercontinental missile to, from left, Cadets R. J. Welden, F. D. Hinton, R. A. Schaffner, C. R. G. Rendoud and S. S. Ho. Note booster.



**FRIEND IN NEED** — When Mary Ellen Short, Data Reduction, was hurt in a Florida highway accident, a special turning frame necessary for proper treatment was not available in Cocoa hospital. SOS to Hawthorne brought fast action. Northrop paid all charges for frame. All involved in accident have recovered: Mary Ellen; Dorothy Williams, Guidance; and Eleanor Morgan, Instrumentation. Hospital will keep turning frame as gift from Northrop.



**ART IN INDUSTRY**—Marie Sturm and Howard Schnebly, both of Art Services, jointly won first prize in Maintenance Manual Illustration Class at current Art Exhibit of Technical Illustrators Management Association. Display leaves Exposition Park this Saturday.



**ANOTHER FIRST**—Harold Pershing, general supervisor, Art Services, congratulates Jack Leynwood on fulltone color illustration of SM-62 Snark, which earned another first prize at Exposition Park tech art display contest.



**SMART SHOPPER**—Women aren't the only ones who know a good bargain when they see it. Roy Patterson, left, Purchasing, discovered that Northrop could save over \$5000 annually by simply buying a new kind of stapling machine. Charles Murray, chief purchasing agent, examines the new stapler. Northrop uses 1800 staplers yearly. New machine will cut cost in half.



## NEWS BRIEFS

**BUDGET GOALS**—Dan H. Hill, Northrop treasurer, reports that August budgets for indirect salaries and wages have been completely revised based on June 1958 actuals . . . All Department values have been established and published . . . Good budget note is the fact that Northrop Division has—week ending 20 July—reached within one per cent of attaining target set for August new fiscal year breakaway. A minimum of budget dislocation and fund reallocation is expected, therefore, during the onset of this fiscal year . . . Add budget good news — Northrop Division attained 100 per cent realization for fiscal 1957-58. July realization was 105 per cent.

**ATOMIC**—Northrop is now engaged in a phase three analytical study contract on F-89—MB-1 capability. Findings will be used in support of Air Force nuclear air-to-air tactical operations. The Air Force has also indicated that study results will furnish flight pattern criteria for upcoming nuclear rocket carrying fighter systems . . . Norcrafters will recall Operation Plumb Bob, Northrop News, 31 July 1957. This test successfully proved Northrop engineering work done on such flight patterns.

**NORTHROP INTERNATIONAL**—Fifty-five members of Northrop Division top management were briefed on NATO and the N-156F by Northrop International officials—Gil Nettleton, vice-president and general manager, and Geoffrey Parsons, vice-president, Europe . . . Mr. Nettleton and Mr. Parsons covered 1) the NATO military arms trend; 2) conversations with the Continent's leading industrialists on joint manufacturing programs should the N-156F be designated the NATO fighter; 3) ramifications of the foreign sales picture; 4) our government's role in NATO armament plans and prospects . . . Mr. Parsons, at the Corporate office on a business trip, returned to Europe by way of Washington last week.

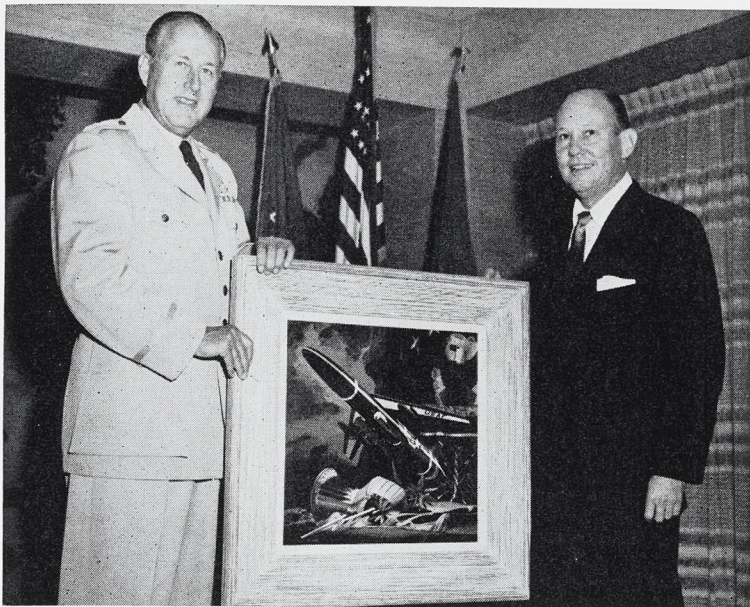
**PROPERTY AND EQUIPMENT SURVEY**—Dan H. Hill, Northrop treasurer, reports that in excess of one-half million dollars in government-furnished property and equipment, not a part of the current manufacturing program, has been returned to Air Force depots for maintenance and operational reuse . . . Additional items, now being screened by Property Management, Ralph G. Lockwood, director, are scheduled for return in the near future.

**T-38**—Negotiations for additional T-38 follow-on aircraft were conducted in Dayton during latter part of July . . . Go-ahead target date for this new business is 1 November 1958.

**TORRANCE MOVE**—Customer Service move from Torrance to Plant Three is well under way, it has been announced by Al Morgan, vice-president, Contracts . . . Customer Training has completed its move and has taken up duties at Crenshaw in the administration building . . . Logistics, Publications and Administration will complete the move from Torrance and will be in their new quarters by end of August . . . Torrance leases are now being negotiated for termination. Field Service, currently in Plant One, is scheduled to move into the Crenshaw service facility about the end of the year.

**MORE JET SUBCONTRACTS**—It is expected that the recently announced orders for additional Boeing 707 jet passenger aircraft by American Air Lines will increase Northrop assembly subcontract work . . . Northrop has had long-standing contracts for outboard wings and fuselage aft sections on the 707 (and the KC-135—Air Force version). Added sales of this airplane will up our (See NEWS BRIEFS, Page 2)

## SAC's Hall of Weapons



**GENERAL THOMAS S. POWER**—SAC's commander in chief accepts Snark painting from Northrop Vice-president, Customer Relations, John Alison. The painting will be hung with honor in the main lobby and hallway of SAC headquarters, Omaha, Nebraska. There it has joined a gallery of great American air weapons being used by the Command in maintaining a deterrent force-in-being. This Snark original oil painting was featured in the nationally advertised Northrop product presentation series.

## President Collins in Television Talk to Norcrafters Saturday

**Beverly Hills, Calif.**—A prospects and progress report to all Norcrafters on Northrop Aircraft and its Divisions will be delivered by President Whitley C. Collins, next Saturday morning.

Mr. Collins will deliver his address over KTTV, Channel 11, at 8 a.m. Saturday, August 16.

The television message to all Northrop people in their homes will be a Northrop as well as an aircraft industry "first" in modern communications.

The Saturday morning time was chosen because of heavy station loads during other hours of the day, and also because Norcrafters families will be together at this time and day of the week.

"I would like to speak personally with each Northrop man and woman," Mr. Collins stated. "I would like to stand before each group to report company progress. But this of course is impossible. Coming to your homes, your firesides so to speak, via the

television screen is certainly the next best choice — perhaps an even better one—because wives and young ones are all vitally interested in the affairs of our enterprise."

Mr. Collins' broadcast will be



WHITLEY C. COLLINS

filmed and shipped to Florida and El Paso for theater-type showing immediately following his KTTV studio appearance in the Southland.

He will speak for approximately 20 minutes.

Topics that Mr. Collins will discuss cover the affairs of the Corporation and all Divisions—Northrop, Nortronics, Radioplane and Northrop International.

He will discuss products such as the T-38, the Snark, N-156F, Radioplane target drones, and Nortronics guidance systems and electronic developments.

He will also report on the conversations held recently between Northrop and American Bosch Arma Corporation relative to a merger between the two Companies.

Date — Saturday, August 16. Time—8 a.m. Television station KTTV—Channel 11.

## Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, August 13, 1958

## HIGH AF OFFICERS TO SEE TRAINER ROLLOUT

America's newest airplane, officially at Northrop Field a sleek, swept-winged super-sonic jet, will be unveiled next Friday at 3 p.m. At that hour, the T-38

space-age trainer will be viewed by Lt. General C. S. Irvine, deputy chief of staff, Materiel; and Major General Carl Brandt, acting commander, Air Training Command.

The T-38, destined to serve as a trainer for next generation of military pilots and space men, beat her rollout date by four days.

General Irvine and General Brandt will be guests of President Collins for the occasion.

Key Norcrafters who have worked long on the project will be congratulated by Mr. Collins for a fine engineering and production showing.

The ceremony will be brief. The new trainer is headed immediately for instrumentation and flight test preparations.

There will be no public display.

The T-38 has century series performance and yet has low production and operating costs.

Revolutionary new J-85 twin jet engines from General Electric, due for delivery later this year, give the T-38 her enormous power and high altitude capability.

Some T-38 facts:

The T-38 supersonic basic trainer is designed for use by the U. S. Air Force for flight training in the following categories: supersonic flight, take-off and landing techniques, multi-jet en-

(See T-38, Page 2)

## Northrop Cafeteria!

Feel lucky at lunch?

(See next issue for details.)

## Norcrafters Advised to Lock Autos

Precaution . . . !

Norcrafters should lock their cars when parked. This holds true for Company parking lots as well as public parking lots.

Paul Crews, director, Plant Security and Protection Services, states, "There has been a sharp upturn in car theft and car pilferage during the past few months. It is always the unlocked car that invites this sort of trouble for the owner. Norcrafters will be performing a distinct service to the Company, and (See PARKING, Page 2)

## New Safety Store Opens August 18

Safety equipment—shoes, safety glasses and other items of personal protective equipment—will have its very own store next August 18, it has been announced by General Manager Richard R. Nolan.

The safety store, now under (See SAFETY, Page 2)

## BILL ALDRICH APPOINTED TO SCHOOL BOARD

William L. Aldrich, assistant to director of Industrial Relations, has just been appointed to the Tustin High School board of trustees.

Although Aldrich's appointment to fill a vacancy is slated to expire next year, he plans to bid for a full four-year term in the 1959 election.

Tustin, a growing Orange County community southeast of Santa Ana, provides secondary-level educational facilities for much of the surrounding area, including El Toro. The high school has a student body of approximately 900.



## NEWS BRIEFS

(Continued from Page 1)

backlog . . . Other 707 and KC-135 subcontracts now under production at Northrop are in process of redetermination negotiations at Boeing. Northrop contract team in conference at Boeing is headed by Gid Kelley and Jack Stiehl.

**ST. LOUIS**—Contract group, headed by Ed Robinson, is in St. Louis at McDonnell for negotiations on F-101 components and design changes. Norcrafters can be proud of their record to date on the F-101. Outstanding effort and attention to detail have substantially reduced originally estimated cost figures for this airplane. Benefits for such accomplishments accrue to all concerned—the Air Force, McDonnell, and Northrop. The nation reaps the largest benefit—more defense per dollar spent.

## Safety Store Opens

(Continued from Page 1)

construction will be located at the east clockhouse area, Plant One.

All Norcrafters and Nortronics people whose duties make safety equipment advisable are invited to make use of this new safety facility.

The store will be operated under the jurisdiction of the Division tool crib system, Tom Pratt, supervisor.

Featured, aside from Hi-Tex safety-toed shoes, will be eye ex-

aminations for purchase of safety prescription glasses.

Shoes and safety prescription glasses will be the only items on sale, but many and varied items of Company issued-free equipment will be on hand. Regular safety glasses, sun glasses, welders safety equipment, hoods, leather aprons, eye shields, gas masks, oxygen masks, hard hats, painter respirators, dust respirators, and many other items will be stocked.

Issuance will be by employee tool requisition.

Store concept and design was a joint effort of Standard Tooling, Tool Cribs, Safety Engineering.

## Parking

(Continued from Page 1)

avoiding trouble for themselves if they lock their cars securely while parked."

Security and Protection work load at present, Mr. Crews pointed out, does not permit the use of guards for continuous surveillance of Company parking lots.

Several persons, however, have been apprehended on Company lots during the past weeks in the act of car theft.

The following points were outlined for car protection.

1) Lock your car securely—all doors and the rear deck.

2) Roll up windows — clear up.

3) Put all valuables or attractive articles out of sight — in glove compartments or in the rear deck.

4) Extras — those of the chrome-plated variety—draw attention. Special hub caps, horns, and the like attract thieves.

5) Have theft insurance.

While not responsible for personal cars parked on Company lots (see *Working with Northrop*, page 88) needless and avoidable loss can be substantially curtailed by following these few simple practices.

## The T-38

(Continued from Page 1)

gine operation, aerobatics, night flying, instrument instruction and cross-country navigation. The T-38 is designed to fill the gap between the primary trainer and Century Series fighters.

Three prime considerations govern configuration in regard to performance: 1) endurance; 2) performance capabilities similar to supersonic combat aircraft; 3) safety requirements for trainers.

## Sports Cars Beeline To Crystal Lake Area

Crystal Lake as the crow flies — or as the sports car wheels.

The Sports Car Club rally set for this Sunday at 8:01 a.m. is a non-navigational event in which the shortest distance between two points will not always be a straight line.

Cars, both foreign-make and those other kind, will take the first corner from parking lot H, 120th and Crenshaw. In less than four hours the rallyists expect to be picknicking, swimming or fishing.

**SCHOOL'S OUT**—Graduates of a highly classified missile training class are, front row, D. B. Wells, J. D. Storey, C. S. Porter, R. W. Peltz, V. L. Del Fante, R. L. Hensley, Masayaki Toyama, W. S. Kosidlak, E. J. Saalfrank, C. A. Bonham; rear row, N. M. Brown, O. T. Decker, Pete Vale, J. V. Botto, J. F. La Rosh, R. N. Wright, A. D. Reidt, D. L. Brennan, instructor P. P. Wurzer, and C. Z. Stine, Technical Training supervisor, Industrial Training. The three-week class, culminating 18 months of tutelage in missile electronic systems and subsystems, pinpointed a select group from Northrop and Nortronics—Manufacturing and Engineering personnel and countdown team members. They will function as first missile final checkout team.

## F-89 Landing Hooks go on Full Speed

Report from Alaska indicates that the Air Force is receiving ahead-of-schedule delivery of F-89J Scorpion landing hook kits and have instituted a full-speed-ahead installation program. (See *Northrop News*, July 30.)

Andy Olseen, engineering project administrator in the F-89 Project Office, recently returned from Ladd Air Force Base in Fairbanks, Alaska. He noted the immediate installation go-ahead on the safety flight item, which incorporates a runway barrier feature for the Scorpion.

"They are installing the new landing hooks at a better than one-a-day pace," he said.

The simplicity of design engineered by the Landing Gear branch of Airframe and Mechanical Design aided the factory in beating the AF delivery schedule by a full month.

## INFORMATION ON OUTER SPACE TO AID PROJECT

The upper atmosphere and the reaches beyond gain daily in importance as Northrop focuses attention on manned satellites and outer space projects.

Knowledge of these spheres was advanced recently when Norcrafters Jeanne Adams, a research chemist in Materials and Process Engineering, reviewed current data with Dr. James Van Allen of the University of Iowa.

Dr. Van Allen, head of the university's Physics department, discovered that Explorer satellites I and III had detected unsuspected high-intensity radiation in the upper atmosphere. He developed the special radiation measuring equipment used in Explorer IV.

Data obtained by Miss Adams will be incorporated in an addendum to Northrop's recently published paper, "A Discussion of the Upper Atmosphere". Dr. George Bryan, Astronautics, and Dr. J. Gordon Wells, Human Engineering, worked jointly on the study, assisted by Miss Adams.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Items advertised in "For Sale" and "For Sale or Trade" categories are limited to a maximum of \$50. Price must be stated.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish

calls. Replies to box numbers are to be in writing. Box number replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

### FOR SALE

CHAIR, club-type, new upholstery, ottoman, \$35. AX 4-9294. A

BED, queen-size, innerspring mattress, box spring, frame, \$50. FR 9-9616. A

TEXTBOOK, Spanish Book One; Friedman, Arjona & Carvajal; \$1.50. Box 2303. A

BICYCLE, girl's, 16x1.75 Goodrich tires, FR 5-4763. A

DODGE, 1937 coupe, \$40. FR 5-7822. A

COFFEE TABLE, blonde square, glass top, w/matching stand, \$12. DA 4-3622. A

SERVING PIECES, platter, large silver-plated, \$25; matching casserole, large, \$10. OR 1-7437. A

BED, Salem maple double-size, mattress, box spring, \$50. OS 5-2797. A

DINING ROOM SET, mahogany, \$25. Box 2301. A

GOLF CLUBS, w/bag, \$15. OS 5-9740. A

OUTBOARD REMOTE CONTROLS, Quick-silver, gas, shift, \$20. OS 6-0496. A

CHAIR, contour-type, dk green freize, \$45. DA 9-2847. A

GOLF CLUBS, Spaulding Bobby Jones, irons 4-9, w/bag & cart, \$45. FR 5-8778. A

CAMERA, Baldina Super 35-mm, f:2.8, flash, case, \$35. OR 1-4720. A

TENT, umbrella-type, 9'x9', \$10. VE 7-4237. A

WATCH, Gruen calendar-type, natural gold, adjustable mesh band, cost \$90, \$30. Box 2302. A

RANGE, Wedgewood apt-size, \$45. FR 6-3507. A

WASHER, GE automatic, \$25. OR 7-0417. A

SCREENS, 2, wooden-frame-type; 36"x54"; 36"x62"; \$1 ea. PL 5-7521. A

BICYCLE, French make, girl's 28" racing-type, gears, blue w/chrome fenders, \$20. HA 9-5445. A

CAR PARTS, 1957 Ford 4-barrel carburetor, manifold, \$40. FR 6-4347. A

DOG, dachshund, 9-mo old female, black & tan, loves children, AKC, license, \$35. TO 7-8588. A

REFRIGERATOR, Kelvinator 7 cu ft, \$50. DA 9-2639. A

CHAIR, white leather, w/ottoman, \$50. OS 6-3849. A

RANGE, Western-Holly gas, \$25. FR 4-7756. A

BED, Sealy mattress, box spring, metal frame, \$35. OS 6-9492. A

HI-FI EQUIPMENT, cabinet, mahogany finish, \$45; record table, \$5. WE 5-6824. A

WASHER, Kenmore automatic, 4 yr old, \$40. OS 5-2054. A

GARBAGE DISPOSER, Westinghouse G45, all parts for installation, \$10. EX 5-0147. A

BICYCLE, boy's 26" racing-type, \$20. PL 2-9597. A

WASHER, Maytag wringer-type, \$15. EA 2-3510. A

PROJECTOR, 100-watt, 2"x2" slides, new lamp, \$10. PL 2-3696. A

### FOR SALE

TIRES, 2, Jeep military-tread-type 7.00x15, w/tubes & Chrysler-type wheels, \$25. EX 8-5201. A

HOUSEHOLD FURNISHINGS, children's chairs, 4, \$2.25 ea; stool, kitchen step-type, \$6; mail box, rural-type, \$2. OS 5-9740. A

TRUNK, hand-size wardrobe, \$3. GR 7-1539. A

KITTENS, silver Persian, 6-wk old, registered, pedigreed, \$25. UL 3-9315. A

DRUM, metal snare-type, w/stand, \$20. Box 2304. A

DINING ROOM SET, walnut, extension table, chairs, \$10. DA 4-4750. A

IRONER, Speed Queen, w/table, \$35. OS 6-5789. A

### WANTED TO BUY

REFRIGERATOR, 12 yr old max., \$25. RI 8-3379. B

FIREPLACE ACCESSORIES. OR 2-2434. B

BICYCLE, 26" racing-type. FR 4-1889. B

### FOR TRADE

CHEVROLET, 1954 convertible, trade equity for older car. FA 8-0363. B

TRUCK, 1957 Chevrolet ¾-ton, standard trans. & rear axle, trade equity for 1957 car. DA 9-3866. C

OLDSMOBILE, 1950 2-dr, trade for 8-mm movie equipment, 2 ¼"x2 ¼" camera & projector, metal lathe, circular saw, bandsaw, welding equipment. TE 2-6746. C

MG, 1952 TD, trade for equity in Hammond church-type organ. Box 2301. C

TRIUMPH, 1954 TR2, extras, trade for bigger car. OS 6-9492. C

### FREE (to be given away)

DOG, toy shepherd, spayed female, black & white, good watchdog, obedience trained, likes children. VE 9-7378. A

### CHILD CARE OFFERED

CHILD CARE, breakfast & lunch, near Northrop, references. OS 5-7088. G

### CHILD CARE WANTED

CHILD CARE WANTED, 3 children, 6:45-5:15 weekdays, my home. PL 5-5712. H

### PERSONALS

THANK YOU from me & my husband for your sympathy & kindness during our daughter's lengthy illness & for the beautiful flowers for her services. SHIRLEY MOORE. L

RIDERS WANTED, Minneapolis Sept. 10, share driving & expenses. FR 6-9212. L

HANDYMAN WANTED, replace 2"x4" plates under frame house, spare time work, beach area. PL 9-6332. L

MUSICAL INSTRUCTION WANTED, electronic precision bass. UN 3-9315. L

### FOR SALE OR TRADE

SPRAY GUN, De Vilbiss TGA501, cost \$30, \$15 or trade for outboard remote controls. DA 4-5824. M

DINING ROOM SET, Barker Bros. eastern-bilt, walnut, large table w/3 leaves, 6 chairs, buffet, \$45 or trade. ME 0-3888. M

FURNITURE, buffet, maple, \$25; bed, maple single-size, \$10; metal bed rack w/casters, \$5; or trade for 8-drawer roll-away tool chest. AX 4-0727. M

WRIST WATCH, Benrus lady's, \$20 or trade for 3-speed racing bicycle or hand mower. FR 5-5298. M

## Northrop News

Vol. 16

Northrop Field, Hawthorne, Calif.

No. 23

A NORTHROP AIRCRAFT INC. PUBLICATION

Published every other Wednesday by

PUBLIC RELATIONS  
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CHARLES BARR, Director

CHARLES BRADFORD, Editor

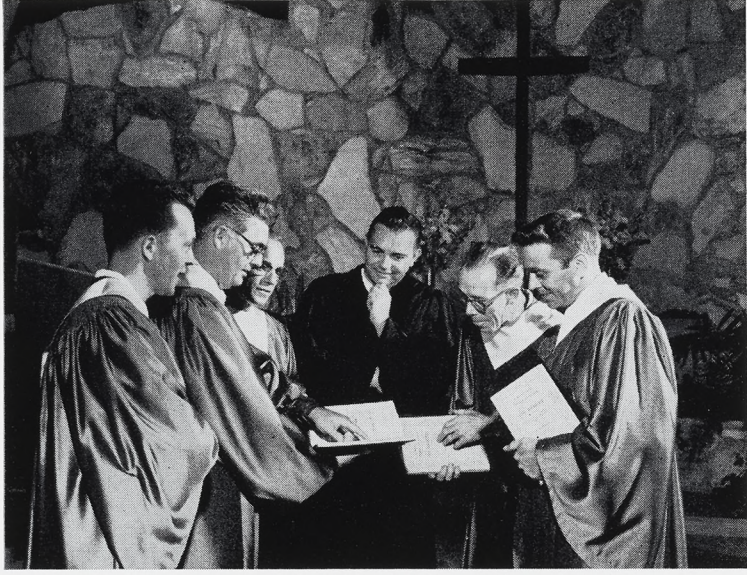
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## Missile Men Graduate





# Chorus Cues "Messiah"



**CHORALE GROUP SETS NOVEMBER PERFORMANCE**—Detailing "Messiah" score requirements is, second from left, Charles Nixon, NRC Mixed Chorus director. Participants in this phase of planning are, from left, George Wanderlich, Nixon, Walter Gilman, Rev. Delaney of La Tijera Methodist Church, Commissioner Burt Bracher and Robert Pratt. Voices are still needed for November presentation.



## RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 1)  
CENTURY & CRENSHAW, Inglewood. B. McDONNELL (5421-49025, ext. 1359). PL 6-9619. 2-1

(Zone 2)  
DALY & NO. MAIN, Los Angeles. J. L. JIMENEZ (5568-53447, ext. 1587). 2-2

(Zone 4)  
SAN BERNARDINO FRWY & TOWNE, Pomona. (Desire car pool.) E. O. HILTON (5568-22511, ext. 2745). NA 4-2520. 2-4  
IMPERIAL & KING, Norwalk. (Desire car pool.) T. M. TRAVIS (7721-26850, ext. 2054). UN 4-5614. 2-4

(Zone 9)  
DEL AMO & HAWTHORNE BLVD., Torrance. C. E. HUBERT, Jr. (5502-21392, ext. 2741). FR 9-3551. 2-9

(Zone 12)  
AIRPORT & MANCHESTER, Los Angeles. MINNIE HALL (5352-50280, ext. 1508). OR 2-4489. 2-12

7:30 a.m. — 4:15 p.m.

(Zone 1)  
CENTURY & CRENSHAW, Inglewood. DOROTHY STADELWISER (8912-54858, ext. 1720). OR 2-2086. 3-1

(Zone 2)  
CENTURY & VAN NESS, Los Angeles. D. MILLS (5231-50322, ext. 1943). PI 4-2067. 3-2

(Zone 5)  
ARANBE & ROSECRANS, Compton. (Desire car pool; via Rosecrans, Vermont, El Segundo Blvd.) W. D. ORR (5163-14933, ext. 1577). NE 2-0848. 3-5

(Zone 5)  
ARTESIA & STUDEBAKER, Lakewood. (Desire car pool.) LOU WILHELM (8930-33435, ext. 1386). TO 6-5131. 3-5

(Zone 8)  
ARTESIA & CRENSHAW, Torrance. ROSALIE RODRIGUEZ (1421-46954, ext. 691). DA 3-3496. 3-8  
WESTERN & 219th ST., Torrance. BARBARA CARTER (1421-27709, ext. 691). FA 8-0363. 3-8

(Zone 9)  
COMPTON & CRANBROOK, Lawndale. ELLEN SMIDBERG (5120-51130, ext. 702). OS 5-0210. 3-9

(Zone 10)  
PROSPECT & 17th ST., Hermosa Beach. MARY THEROUX (300-56153, ext. 1604). FR 4-3710. 3-10

(Zone 11)  
BROADWAY & HAWTHORNE BLVD., Hawthorne. ELEANOR MARKERT (9542-50502, ext. 1471). 3-11

(Zone 13)  
HAWTHORNE BLVD. & MARKET, Inglewood. HELEN SCHECK (5148-54925, ext. 1344). OR 1-6581. 3-12

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 5-1

(Zone 5)  
CENTRAL & OLIVE, Compton. MARILYN GELTOSKY (3120-56061, ext. 1551). NE 8-5257. 5-5

(Zone 5)  
CHAPMAN & WEST, Garden Grove. (Established car pool.) A. J. RYAN (3142-32958, ext. 2022). JE 7-2555. 5-5

## RIDES WANTED

8:00 a.m. — 4:45 p.m.

(Zone 10)  
HERMOSA AVE. & 17th ST., Hermosa Beach. ROSEMARY PENNY (3120-48588, ext. 2535). FR 2-0625. 5-10

(Zone 12)  
AVIATION & MANHATTAN BEACH BLVD., Manhattan Beach. (Consider car pool.) BOB HOLT (8821-15869, FA 8-8410, ext. 136). FR 6-5626. 5-10

(Zone 12)  
SEPULVEDA & 77th ST., Westchester. EDNA CURFMAN (3144-54927, ext. 1848). OR 4-6425. 5-12

4:45 p.m. — 1:15 a.m.

(Zone 3)  
BALDWIN & LAS TUNAS, Arcadia. (Consider car pool.) PEGGY LOGINDICE (5504-21455, ext. 2244). HI 7-3907. 8-3

(Zone 4)  
CENTRAL & HOLT, Ontario. (Established car pool.) HUGH THEURER (7721-11895, ext. 2054). 8-4

## RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 4)  
SAN BERNARDINO FRWY & TOWNE, Pomona. (Desire car pool.) E. O. HILTON (5568-22511, ext. 2745). NA 4-2520. 12-4  
IMPERIAL & KING, Norwalk. (Desire car pool.) T. M. TRAVIS (7721-26850, ext. 2054). UN 4-5614. 12-4

(Zone 5)  
ARTESIA & LAKEWOOD BLVD., Bellflower. E. F. SHANE (5503-18635, ext. 2464). ME 0-1210. 12-5

7:30 a.m. — 4:15 p.m.

(Zone 5)  
ARANBE & ROSECRANS, Compton. (Desire car pool; via Rosecrans, Vermont, El Segundo Blvd.) W. D. ORR (5163-14933, ext. 1577). NE 2-0848. 13-5

(Zone 5)  
ARTESIA & STUDEBAKER, Lakewood. (Desire car pool.) LOU WILHELM (8930-33435, ext. 1386). TO 6-5131. 13-5

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 15-1

(Zone 5)  
CHAPMAN & WEST, Garden Grove. (Established car pool.) A. J. RYAN (3142-32958, ext. 2022). JE 7-2555. 15-5

(Zone 9)  
HAWTHORNE & 190th ST., Torrance. A. AUTERA (3710-31624, ext. 1807). FR 9-6606. 15-9

(Zone 10)  
AVIATION & MANHATTAN BEACH BLVD., Manhattan Beach. (Consider car pool.) BOB HOLT (8821-15869, FA 8-8410, ext. 136). FR 6-5626. 15-10

3:45 p.m. — 12:15 a.m.

(Zone 5)  
SPRING & STUDEBAKER, Long Beach. (Via Artesia.) K. N. ANDERSEN (5564-22097, ext. 2565). 16-5

## Not a Duffer in the Lot NRC Open Trophyists

### Low Gross

Bill Putnam, 74-69—143

### Low Net

R. L. Mitchell, 154-22—132

### Championship Flight

Tom Bullock, 150-16—134

### A Flight

Caryl Miller, 160-22—138

### B Flight

Bill Shireffs, 163-26—137

### C Flight

Russell Munsen and  
Leo Littman, 168-30—138

### D Flight

Carl Relishes and  
Ted Abeyta, 174-38—136

### E Flight

Ken Bettinell, 189-52—137

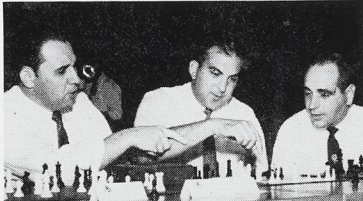
## Chrysong Made Area Governor By TM Groups

Jerry Chrysong, Nortronics ES&E Purchasing, has just received an appointment as Toastmasters International area governor.

An annual selection by the district governor, Chrysong's post incorporates Hawthorne, El Segundo and the Bay Area. Part of the area governor's function is the training of local Toastmasters officers in administrative duties.

Chrysong is past president of El Segundo Toastmasters, whose membership is concentrated within the Mariposa facility.

He is also an exponent of Junior Toastmasters and was instrumental in establishing such a club at El Segundo High School for juniors and seniors.



### STRATEGISTS AT WORK

While International Grandmaster Isaac Kashdan made one of his nearly 40 circuits, counterattacks were planned by the trio above: NRC Chess Club Commissioner Bill Henderson; Russ Gimbrone, Contract Pricing; and Frank LaMontagne, Radioplane. Below, Frank Strohming, Tooling, disclosely studies board.



4:45 p.m. — 1:15 a.m.

(Zone 3)  
BALDWIN & LAS TUNAS, Arcadia. (Consider car pool.) PEGGY LOGINDICE (5504-21455, ext. 2244). HI 7-3907. 18-3

(Zone 4)  
CENTRAL & HOLT, Ontario. (Established car pool.) HUGH THEURER (7721-11895, ext. 2054). 18-4

## Northrop Days in Redondo Honor Boat Club's Regatta

The upcoming First Annual Midsummer Regatta, August 23-24, is setting precedents in local boating circles.

It's the first invitational race sponsored by an industrial recreation club, the first such event sanctioned at King's Harbor, and the first using the newly revised classifications of the California Outboard Boat Racing Association.

To spotlight the regatta, Redondo Beach Mayor LeRoy Center has proclaimed the weekend of August 23-24 Northrop Boat Club Days. Pulchritude has been lent by the beach city's Chamber of Commerce. Their queen, Helen Zalisney, will wield her sceptre during the two-day agenda.

Saturday morning the Queen and her Redondo court will cruise out to welcome the boats coming up from southern anchorages. Ski fleet exhibitions and a jousting contest are scheduled for that afternoon—plus a dinner-dance.

## LOS SERRANOS SCENE OF NEXT NRC GOLF FEST

The fairways of Los Serranos will again be challenged by Northrop golfers, whose stinginess with strokes was verified in the recent NRC Open. (See box above.)

The tournament tees off September 18 at this popular course near Chino. Merchandise awards are slated for all flights.

With only 20 foursomes scheduled, tourney slots may not remain open long. Beginning Monday, entry forms will be available at all Personnel Activities offices.

at the Redondo Beach Eagles Hall in the evening.

Stock runabout fleet 25-mile races, slated for Sunday from 0700 to 1400, will reward with trophies the top three in each of 11 classes.

Coast Guard Flotilla 65 rescue boats will be on sea watch. Saturday night shore watch and launching-retrieving crews for Sunday will be handled by Sea Explorers.

Next Monday is entry deadline. Forms can be obtained at all Personnel Activities offices.

## NRC Marksmen Aim at Quarterly Trophy Shoot

Sights are focused on the NRC Trap and Skeet Club Quarterly Trophy Shoot.

The two-round, 50-target skeet event is slated for Saturday, 9:30 a.m., at the Long Beach Dominguez Gun Club. There will be four classes, with a trophy on the line for each class.

In order to qualify for competition, two rounds must be shot prior to the event and the scores recorded with Dan Kawashima, commissioner.

## NOB HILL SURF IS STAGE FOR CASTS OF DISTAFF SIDE

Fishing for frauds and frauleins is the theme of the NRC Surf Fishing Club meet set for Saturday, August 23, from 6 to 10 a.m.

The annual Ladies Day trophy will be hooked by the female who hauls in the largest fish (husbands excepted) at Nob Hill, Torrance Beach.

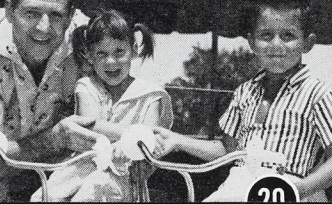
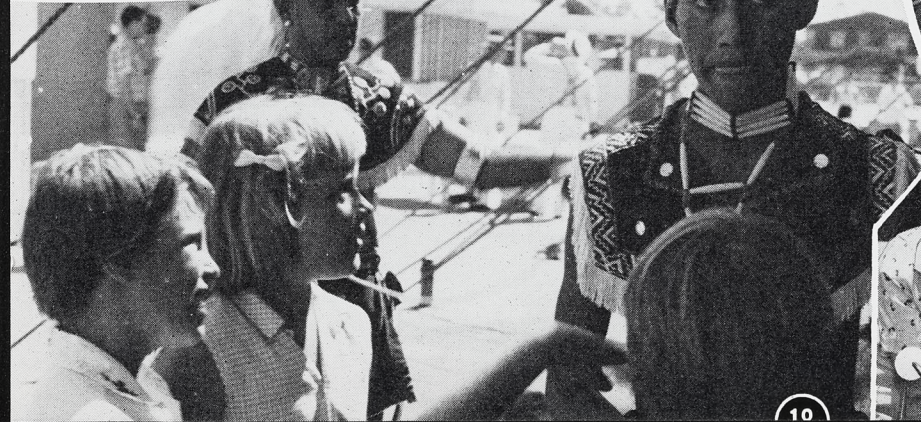
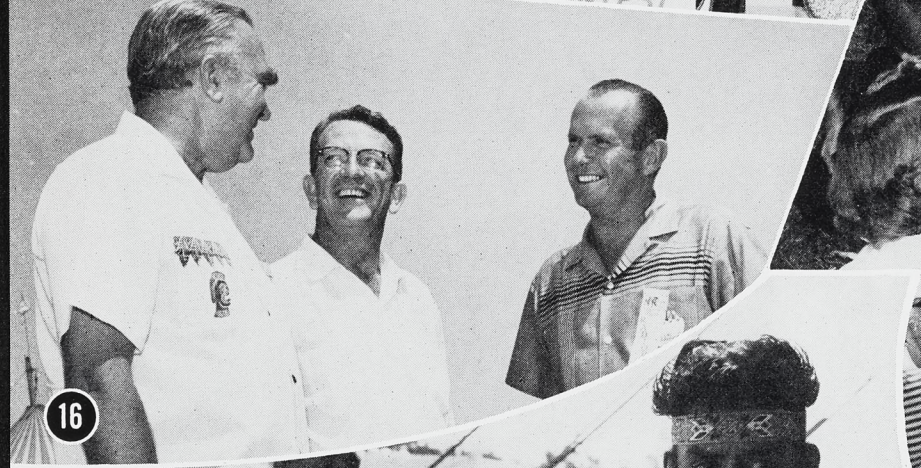
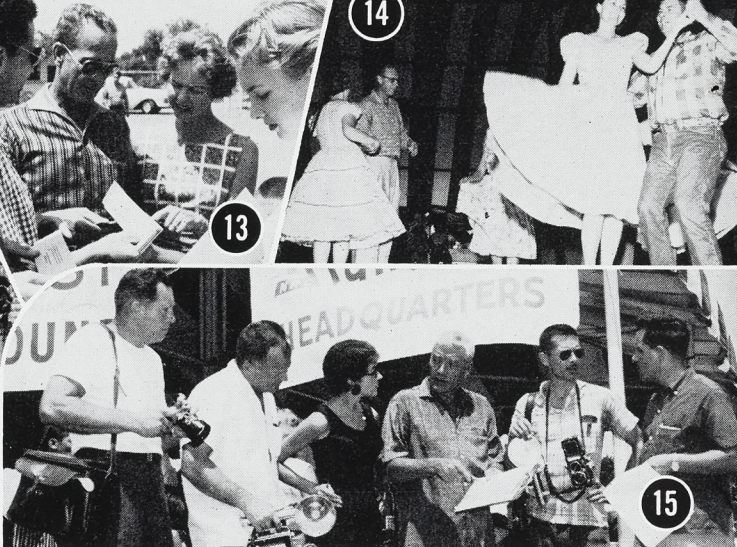
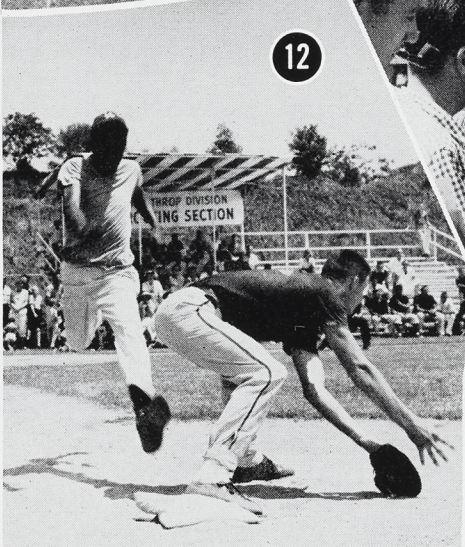
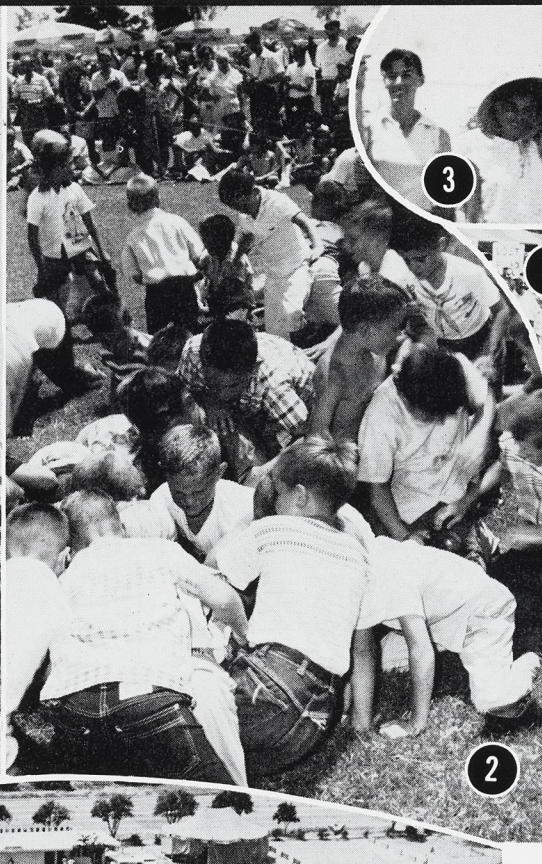
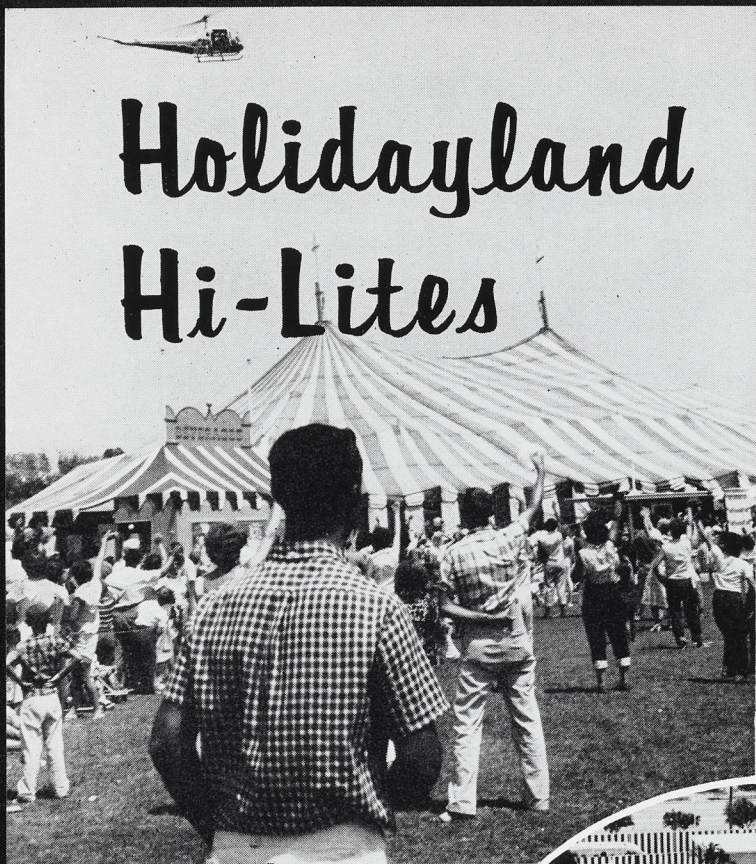
## Chess by the Mile



**WHOLESALE GAMBITS**—Over a mile was traversed by Isaac Kashdan, Los Angeles Times chess editor, in his treadmill rounds at the recent NRC Chess Club exhibition. But the moves were far from perfunctory. Kashdan displayed superb chessmanship, bested but once as he defeated 35 antagonists and drew with two. Lone duelist remaining unscathed was Nortronicsman Robert Kozel.



# Holidayland Hi-Lites



## unstival...

1) Norcrafters of three Divisions wave at friendly chopper which circled Holidayland during giant all-Northrop funstival. Pilot was Will Collup, with Charles Boyle, Personnel Activities, and Ron McGaffin, Northrop photoman, on board. 2) No fracas—a shoe scramble. Sammy DeLuna, guest, won. 3) Waving their balloons at the starting line of the women's hobble race, these girls vied for handbag. 4) Marshall Lucky Lerado, left, is fastest gun—in Holidayland. Radioplane's Mike Cefaratti had cocked and aimed the Colorado Kid's sixgun, but Lucky drew and fired first. 5) No blockhead is 11-year-old Sylma Sagahon, daughter of Lily and Oscar, both of Nortronics. She bested all these girls at the art of head-balancing a block of wood. 6) Early merrymakers converge on the

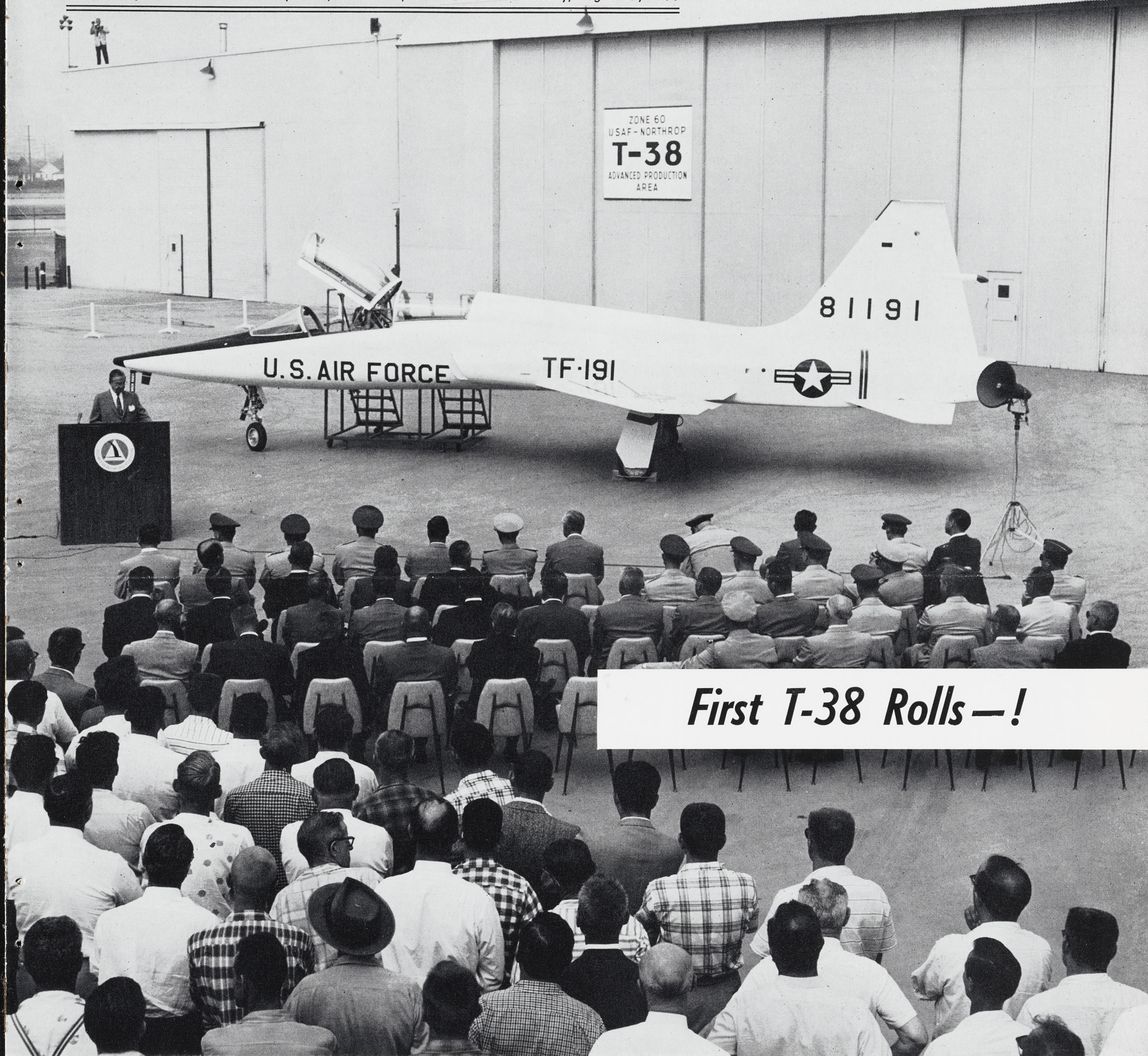
NRC Family Funstival gate. 7) The NRC Mixed Chorus, directed by Charles Nixon, medleyed thrice under the big top. 8) And here's what greeted Northrop whirlybird (see first photo)—nearly 7000 Funstivaleers. 9) Disneyland braves thump the war drum for the jam-packed junior audience. 10) The tri-Division softball tourney was nabbed by Northrop's all-star nine. They blanked Nortronics 6-0 behind the three-hit hurling of Jeff White. Then Don Bevans gave up a lone safety in goose-egging Radioplane 5-0. Bob Lloyd presented the NRC Funstival trophy. 11) Rivet-guessing is Joe Kalina's forte. Joe, Northrop Division, spotted 9223 1/4 in the jar—there were 9231. Congratulations are extended by Boyd Corwin and Harry Clark. 12) Futile sprint by Radioplane's Tom Morgan got him to first a shade behind the ball mitted by Greg Halberg of Northrop. 13) The 2500th adult through Funstival's portals, Radioplane's Bill Kurz received five booklets of Disneyland ride tickets—one for each member in his group. Every time the turnstiles toted up another 500, the lucky family got a free trip to Disneyland. 14) In the king-size candy-striped tent, the NRC Square Dance Club exhibited some plain and fancy dosedo. 15) With the press mustered en masse, Charles Boyle, third from right, cues Funstival to lensmen Sam Orr and Ron McGaffin, and Northrop News staffwoman Margo Wood. Photographer Val Hawes is conferring with Marc Nault, Nortronics News editor. 16) Funstivating are vice-presidents Bill Larrabee, Dick Nolan and Kip Tuttle. 17) Banana-eating teens competed for NRC award of two RCA record players. 18) Awed kids ambush Disneyland tribesman. 19) Mrs. Jim Orr and her junior edition, Louise, point to portable TV, rivet-guessing prize. Papa's from Northrop Division. 20) Mary Ann Couture, 4-year-old lass of Don, Nortronics, shakes hands with Robert, another Sagahon champion. (See fifth photo.) Boyd Corwin has just given tricycles to nimblest "runners-to-mama."



# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, August 27, 1958



## *First T-38 Rolls—!*

**T-38 ROLLOUT DIGNITARIES**—Front row, from left: T. V. Jones, senior vice-president, Northrop Aircraft, Inc.; Brig. General Marcus F. Cooper, commander, Flight Test Center, Edwards Air Force Base; R. R. Nolan, Northrop corporate vice-president and general manager, Northrop Division; Lt. General Clarence S. Irvine, deputy chief of staff for Materiel, USAF; Whitley C. Collins, president, Northrop Aircraft, Inc.; Lt. General Charles T. Myers, retired, until recently commander, Air Training Command; Rear Admiral

Truman J. Hedding, U.S. Navy Bureau of Aeronautics general representative, Western Division; Dr. William F. Ballhaus, Northrop corporate vice-president and general manager, Northrop Division; Maj. General Carl A. Brandt, acting commander, ATC; Major General Wiley D. Ganey, assistant to vice-commander, ATC; Colonel Jerry D. Page, director of Plans and Operations, ATC; and Edgar Schmued, consultant to Northrop. Assembly hailed rollout of T-38 — nation's first lightweight supersonic trainer aircraft.





# Rollout of First Air Force T-38 Signals New Era of Flight Training

The first U. S. Air Force T-38 supersonic trainer rolled off the advanced production assembly line August 15, four days ahead of schedule.

Designed to train pilots for a new generation of space age craft as well as conventional fighter and bomber missions, the T-38 is being produced in evaluation quantities by the company's Northrop Division.

Military and Northrop officials viewed the gleaming white, twin-

jet craft today after it was rolled from its production hangar.

**Northrop President Whitney C. Collins commended Northrop project personnel on their fine schedule showing and on low cost achievements on the T-38 to date.**

John Alison, vice-president, Customer Relations, was master of ceremonies for the occasion.

Military visitors were headed by Lt. General C. S. Irvine, deputy chief of staff, Materiel; Major General Carl Brandt, acting commander, Air Training Command; and Rear Admiral Truman J. Hedding, U. S. Naval Bureau of Aeronautics, general representative, Western Division.

**General Irvine in speaking of the T-38 was quoted by the press as saying that "The T-38 is the finest bit of training equipment the Air Force has created," and that the "T-38 will train pilots for Century Series aircraft yet unborn . . . This is a great opportunity for people at Northrop," he concluded.**

The T-38 is the first trainer capable of delivering Century

Series fighter performance. It weighs one-half to two-thirds as much as operational fighters. Its small size and simplicity shrink the costs of production and operation.

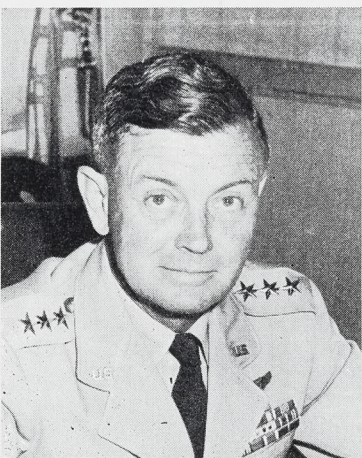
In parallel development is a counterair fighter version, the N-156F, designed to provide NATO, SEATO and other allied free nations with an effective air defense at low cost.

Chemically-fueled bombers, a new generation of fighters and boost-glide vehicles are expected to go into service within the operational life span of the T-38. Many of these craft will be flown by pilots who will acquire their first supersonic flight experience in T-38s.

Twin General Electric J-85 turbojet engines figure prominently in the Northrop concept of lightweight, high performance aircraft. These new powerplants have an exceptionally high thrust-to-weight ratio, making significant weight-saving possible in the design of the T-38.

Twin engine reliability is a strong safety factor in the T-38. In the event of engine failure during takeoff, the plane can complete its takeoff on one engine, climb to a safe altitude and return.

Each engine drives a separate hydraulic pump and electrical generator. In the event of engine failure, one engine can provide all electrical and hydraulic power



**GENERAL SMITH**  
New ATC Commander

required to complete the flight safely. Each J-85 has an independent fuel supply system, but all fuel can be sequenced to one engine.

Because of its light weight and relatively low landing speed, the T-38 requires no drag chute.

Instructor and student are seated tandem in individual pressurized, air conditioned cockpits enclosed by separate jettisonable canopies. The instructor is seated behind and 10 inches higher than the student to provide for proper surveillance and forward visibility.

The cockpits are fitted with ejection seats. In case bailout is necessary, the instructor is protected from wind blast by a transparent plastic panel during the interval between the student's ejection and his own.

T-38 fuselage lines are characterized by reverse or "coke bottle" curvature at the wing junction in conformance with the "area rule" theory of design. The wing is thin, short and moderately swept.

## GENERAL BRANDT

### ON THE T-38 . . .



#### TO ALL NORCRAFTERS:

*The supersonic high altitude flight performance of the newest fighters and bombers now becoming our first-line aircraft poses a new problem in flying training. The trainer used for the 1960 decade must be capable of training in high sink rates, supersonic flight, high altitude indoctrination, extreme attitudes in instrument flights, high altitude formation problems, and navigational problems brought about by high altitude flight and supersonic dashes. A new basic trainer, combining safety, simplicity and economy, and having combat performance characteristics, is required.*

*We believe the T-38 will satisfy this new training requirement. The performance capabilities of the T-38 will permit training in all 1960 decade requirements. No expensive tactical type aircraft will have to be used in the training program to bring the student up to the level of proficiency demanded by the combat vehicle of this era.*

**Major General Carl A. Brandt,**  
Acting Commander  
Air Training Command

## Northrop News Editorial

### A New Generation

Men of this nation have their eyes on space. Especially young men. And these times are like other times in the history of mankind when new frontiers beckoned.

Actually new frontiers do more than beckon. They impel.

Space is next. In fact it is here.

Friday, August 15, a beautiful white airplane came into the sun. The ponderous doors of the Advanced Production building opened, and Rex Thornhill and his boys gently ushered the T-38 USAF trainer out onto the concrete. The airplane was long and low and lean. And clean.

There was a sudden hush in conversation from the large crowd of Air Force, Navy and Northrop officials.

The airplane looked like speed and action. It was a symphony of man's accumulated knowledge about the things he builds that fly. And it was more beautiful than ever because it was an instrument of teaching, of knowledge.

Her supersonic speed, her obedient willingness in the air, her ability to live safely with the inadvertent errors of the fledgling space man, are things that will endear her to the annals of flight for years to come.

The T-38 will mother a new generation of flying men. Young men. Some of them are on the sandlots at this moment, being Dodgers against the Giants.

It gives pilots great pleasure to say good things about their hardware. On alert, during the long hours of standby, in the mess halls, the T-38 will take her place when men talk flying. She will be a leading lady in this ever unfolding story of men and the sky.

The Air Training Command is a proud and honored organization. The fighter men, the bomber men, and the transport men of today first tried their wings under ATC's watchful, and sometimes anxious, eye. And the space men of tomorrow will learn their way along the lonely astral paths at ATC.

Air Force men are strong men. And, as is the way with strong men, much stern and rugged stuff will be expected of the T-38.

Norcrafter have built a strong and rugged airplane. She looks like a lady. She is a lady. But under her clean-lined exterior there is the toughness and reliability and work-horse capability that it takes. She will hold her own and more in that great high blue classroom where young American pilots will learn their three Rs of space.

## A History of the ATC

By SECOND LIEUTENANT DAVID Y. BURKETT

Air Training Command last month celebrated its 15th birthday.

In 1943, the AAF Training Command under Lt. Gen. Barton K. Yount consisted of more than a million people—divided almost evenly between students and permanent party, six subordinate commands and 600 training installations.

Training strength was at its peak during World War II; half the installations were devoted to flying training activities alone.

Then, demobilization brought a striking reduction in Command strength.

### PILOTS TRAINED

From a high of 80,693 pilots trained in 1944, the Training Command was turning out only 344 in 1946. By December, 1945, the number of training stations had been reduced to 39.

The AAFTC became Air Training Command in 1947 when the Air Force became a separate organization. With the outbreak of hostilities in Korea in 1950, the Air Force expanded on an emergency basis, training rates shot skyward, and subcommands were reinstituted to care for the myriad of courses demanded by a military force in mobilization.

### KOREA

Additional bases were pressed into service, and ATC's structure expanded from 17 to 43 bases in the three years following the beginning of the Korea conflict.

Today, the Air Training Command conducts training at 26 bases scattered throughout the United States. In Fiscal Year 1957, more than 135,000 men and women graduated from ATC's technical schools beyond basic military training. Another 21,000 graduated from flying training courses, and an additional 19,000 from crew training.

ATC is currently conducting or programming courses on 14

separate missile weapon systems including the Snark.

Besides flying and technical training leading to qualification in a skill required by the Air Force, ATC also

### MANY DUTIES

—operates basic military training courses for new recruits, refresher courses for reenlistees, pre-flight courses for ROTC graduates and aviation cadets, and the Officer Candidate School for future officers.

—takes the classroom to students at bases throughout the world, by way of the 3499th Field Training Wing, to give additional instruction and specialized training.

—conducts the large majority of AF recruiting through its 3500th USAF Recruiting Wing with headquarters at Wright-Patterson AFB.

Lt. Gen. Charles T. Myers has

(See photo, Page 1)

guided ATC in the accomplishment of its complex mission since 1954. Under his direction, ATC's organizational structure was revised into a more centralized and more efficient peacetime operation. One of the most significant steps was the recent discontinuation of ATC's three subordinate commands. Their responsibilities have been assumed by a reorganized Command headquarters at Randolph AFB. General Myers retired from the Air Force with high honors on 31 July 1958.

### GENERAL SMITH

Lt. Gen. Frederic H. Smith, jr., named as ATC's new Commander, will assume duties later this summer.

The product of ATC is people, trained to think and trained in the skills necessary for modern defense. On its fifteenth birthday, Air Training Command remains the largest schoolhouse in the free world — dedicated to producing the quantity and quality of men needed by today's Air Force.



**NORTHROP**

# NEWS BRIEFS

**MINUTEMAN**—"Minuteman proposals are receiving the utmost attention of Northrop top management," stated Vice-president and General Manager Richard R. Nolan. "The Minuteman proposals are of great importance to our government, for this concept represents the next generation of weapons systems after the ICBMs. Our proposal is in the assembly and test task area. All departments have been directed to support this effort 100 per cent." . . . Formal proposal is now being prepared . . . General Manager Nolan has implemented the project with top priority urgency including a management team composed of highest echelon management personnel . . . Long experience in the development of the Snark eminently qualifies Northrop to provide a major contribution to the program . . . Milt Kuska, director, Flight Test Engineering, eminently qualified in flight testing and with long management experience, has been named project manager. A separate work area on the first floor of Engineering and Science Center has been provided. Staff is composed of top technical personnel representing all Departments. Ed Trudel in charge . . . All necessary resources have been placed at the disposal of the Minuteman project manager.

**AMERICAN BAR ASSOCIATION**—George Gore, Corporation secretary and general counsel of the Northrop Division, addressed a session of the American Bar Association yesterday at the Ambassador Hotel. Speaking before the Section of Insurance, Negligence and Compensation Law, Mr. Gore detailed some of the new legal implications incident to aviation's entering the atomic age.

**WOODS HOLE**—Northrop participation in summer study group activities of the National Academy of Science sponsored by the Department of Defense at Woods Hole, Massachusetts, was announced by George Douglas, vice-president, Engineering. The group, which is headed by Dr. Theodore Von Karman, chairman of advanced aerodynamics research and development for NATO, deals with United States technological and operational capabilities for the next 15 years. Northrop's Chief of Weapon Systems Analysis, H. K. Weiss, is a permanent member of the study group currently in conference at the Cape Cod site. Welko E. Gasich, director of Weapon Systems Development Engineering, and Jim L. Taylor, supervisor of guided missile section Weapon Systems Analysis, also have provided technical briefings before the study group at the invitation of the Air Force. "Northrop's policy of participation in these scientific advisory group activities is in keeping with our desire to ensure a maximum contribution to national defense," said Mr. Douglas.

**NEW WEAPONS SYSTEM**—Proposals were submitted to North American Aviation 14 August for engineering design and fabrication of the F-108 wing assemblies. Proposals for design and fabrication of fuselage structural area, horizontal and vertical stabilizers on B-70, chemical bomber, were submitted 21 August. Proposals, thirty days in progress, were spearheaded by Vice-president and General Manager R. R. Nolan. Russ Bowditch, Customer Relations, handled North American - Northrop contacts; Tom McCarthy directed coordination within this company. Bids will be reviewed and appraised by Source Selection Board made up of North American and Air Force officials. Successful bidders will be notified 1 November for the F-108, 1 December for the B-70 . . . John Alison, vice-president, Customer Relations, stated: "Northrop is in an excellent competitive position in bidding on large subcontracts of this nature. Our effective cost control program has proved that we are among the foremost in the nation in production of low-cost, high quality aircraft products. We should rank very high as a source contractor for these airplanes." A Northrop team headed by Senior Corporate Vice-president Robert R. Miller will attend a Bidders' Proposal Conference at North American on Wednesday, 27 August, in connection with support systems for the B-70 chemical bomber.

**LAX COMPLETES PROGRAM**—LAX facility with guidance program complete is now in process of returning aircraft and equipment to Air Force. Norcrafters at LAX are being reassigned . . . Guidance test program began in 1948 with P-61 Black Widow aircraft. B-29s, then B-45s, were later used. Flights totaled 775; hours were approximately 2500 . . . There were no airborne accidents . . . "I wish to congratulate the LAX team on a remarkable showing," stated Vice-president and General Manager Richard R. Nolan. "This project, one that called for the highest skills, was successfully completed and the Snark guidance system was proved beyond all doubt of being capable of directing a missile anywhere in the world. LAX also proved the system's reliability. The job was accomplished on time, within their budget, and with a perfect safety record. Well done to LAX."

**Northrop News**

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# President Collins Progress Report Highlights Present, Future Outlook

Northrop is well prepared to meet the challenge of the future.

This was the keynote of the progress and prospects report on Northrop Aircraft, Inc., delivered by President Whitley C. Collins via television and radio to all Norcrafters August 16.

The address marked an aircraft industry first in company communications. It was carried over KTTV, channel 11, and radio station KBIG.

Mr. Collins said, "I think we can be proud that Northrop has grown so large that we need television for our family meeting these days."

He introduced his report with praise for the improved performance

being achieved throughout the corporation, noting that Northrop is in the middle of a real belt-tightening operation.

**"Your job and mine depends on it. As airplanes and missiles become more complex and expensive, the defense budget gets tighter. The pressure on defense contractors to reduce costs is heavy. Companies which cannot meet these demands are on the way out. We do not intend to be among them."**

He stated that Northrop's "security with solvency" philosophy is paying off; Northrop is gaining increased recognition as a real leader in cost-consciousness.

There is still not enough business to go around, Mr. Collins said, and as a result nearly every major aircraft company has had

to reduce its work force; however, Northrop's reduction has not been as drastic as that in many companies.

Next, President Collins discussed the overall corporate organization and the continuing moves to strengthen the company's executive leadership. "I have felt that there is no substitute for a powerful management team," he asserted.

President Collins also talked about the Northrop Division's progress on the T-38 and N-156F airplanes and a host of advanced projects underway at Hawthorne.

**Regarding a possible merger with the American Bosch Arma Corporation, President Collins related that he and several corporate officers had just returned from a two-week survey of that company's facilities.**

**"American Bosch is a fine company, and at present it appears that it offers a real opportunity to broaden our base of operations and increase our strength," he reported.**

"We are working on ways to make this fair and acceptable to the personnel and shareholders of both companies, but I am hopeful that this will develop into a happy marriage of our two great companies. In any case, we will keep you fully informed as our discussions progress."

# Meals Free — Cafeteria Offers Three Bonus Days

More than a hundred lucky Norcrafters will dine free during the three days following the Labor Day holiday when Cafeteria Service initiates cafeteria bonus days, it was announced by Manager Freddy Wolfe.

All Norcrafters can take part in the lucky bonus program. Rules of the game are simple. You fill your tray as you usually do with tasty dishes from Northrop's prize-winning kitchen and move on to the smiling cashier.

That strange ticking sound you'll hear is not a bomb. A bonus timer will be placed in every cash register in the plant

off for free meals for the lucky people at the register when the bell rings.

And for Norcrafters in the outlying areas serviced by the rambling "chuck wagons" with hot meals, salads and sandwiches, the lucky bonus will come in gift certificates neatly sequestered in plate lunches. A gift certificate in your lunch, and the meal is free.

# General Medaris

cafeterias. When the timer bell rings, the Norcrafter about to pay will be told to pocket his lunch allowance, courtesy of Cafeteria Services.

There will be one winner at each cash register during each lunch period. For Plant 1 and the New Engineering Center there are four registers and four periods—in other words, 16 free meals a day. At Nortronics Plant 2 there will be nine winners. At Plant 3 there will be six free meals.

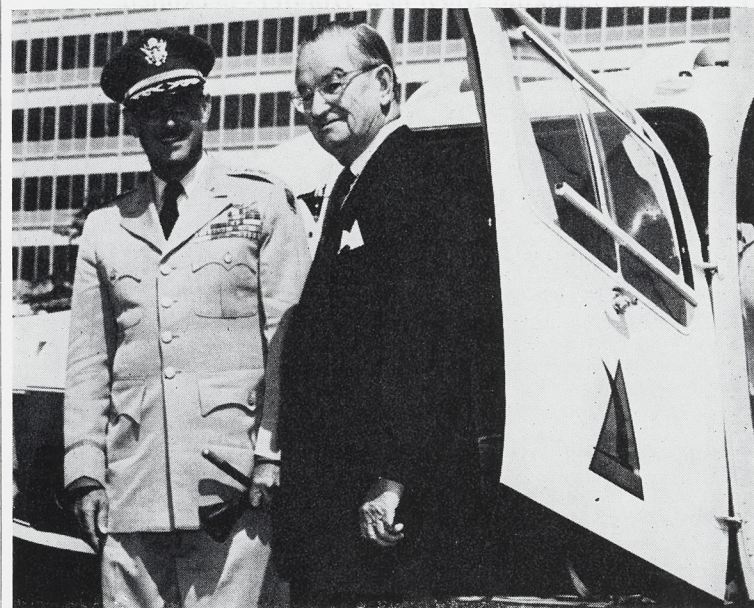
Night-shift Norcrafters also will hear the little timers ticking

# LABOR DAY—A HOLIDAY FOR ALL NORCRAFTERS

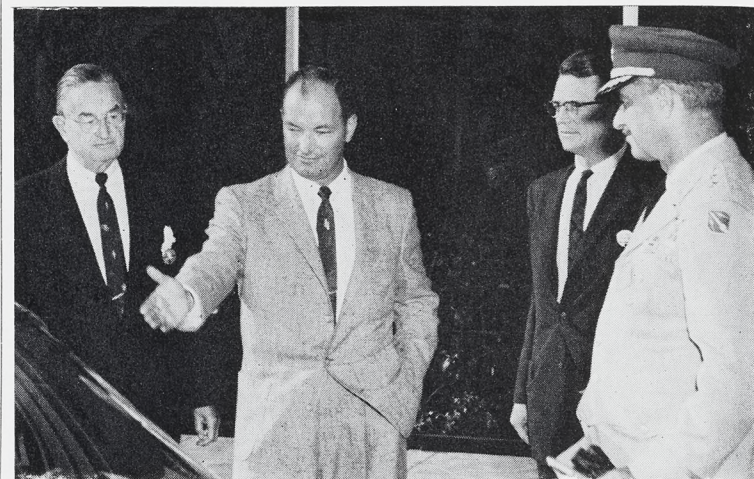
All Northrop facilities will be closed on Monday, September 1, in observance of Labor Day. This is a paid holiday for all personnel on the active payroll—not on leave—as of August 31.

All hourly rated personnel, not on leave of absence, will receive eight hours straight-time pay for that day. Those on vacation will receive an extra day's pay to compensate for the holiday.

Salaried personnel on vacation will receive an extra day of vacation to allow for the Labor Day holiday.



**HIGH-RANKING GUEST**—President Whitley C. Collins greets Maj. General John B. Medaris, commanding General of the U. S. Army Ordnance Missile Command. Northrop-operated helicopter flew general and his party from Ambassador to tour Hawthorne and Anaheim facilities.



**AT HAWTHORNE**—General Medaris is escorted by Whitley C. Collins, president; Dr. Wm. F. Ballhaus, vice-president and general manager, Nortronics Division; and R. R. Nolan, vice-president and general manager, Northrop Division. The general was briefed on current and proposed Northrop missile projects and company capability.



## NRC Good Time Table for September

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days), Wes Williams**  
Meet Wednesdays, 6:30 p.m. Archery classes now in session.

**ARCHERY (nights), Paul Randolph**  
Meet Wednesdays, 12:15 p.m.

**ART CLUB (days), Forrest Ayrest**  
Meet in Annex Thursdays, 7 p.m. Models furnished by NRC. Sculpture classes Wednesdays, 7:30 p.m.

**ASTRONOMY (days), Jim Stowe**  
Meet 2nd & 4th Mondays, 7:30 p.m.

**BIBLE STUDY, Roy Stahl**  
Plant 1—Daily, 11:30-12:15. Tool Design Bldg. 11-11:45, 5566 Conf. Room. Plant 11—Mondays & Thursdays, 12-12:45, Conf. Room 2.  
Eng. Center—Daily, 12-12:45, Reliability Conf. Room.

**BOAT CLUB, Fred Wheeler**  
Meet 1st Wednesdays, 7:30 p.m. Night shift meets 3rd Thursdays, 2:30 p.m. Water Ski Club (days) meets 3rd Thursdays, 7:30 p.m. Labor Day Cruise, August 30-31, September 1.

**BOWLING (days), Dave Carney**  
**BOWLING (nights), Charlie George**  
Winter leagues starting.

**BOY SCOUTS, Stan Morris**  
Sea Scouts, Intermediates, Cub Scouts. All Norcrafters boys welcome.

**CAMERA CLUB (days), Fred Armstrong**  
Meet 1st, 3rd & last Wednesdays, 7:30 p.m.

**CAMERA CLUB (nights), John Newman**  
Meet 1st & 3rd Saturdays.

**CAMPING CLUB, Fred Brant**  
Meet 1st Mondays.

**CHESS CLUB, Bill Henderson**

**FISHING**  
Fish registration cards available at Personnel Activities.

**GEM & MINERAL CLUB (days), Raymond Cole**  
Meet 4th Wednesdays, Mineralogy class Thursdays, 7-9 p.m.

**GOLF (days), Ted Deguise**  
**GOLF (nights), Russ Munson**  
Los Serranos September 14. San Clemente October 19. Ojai Valley November 16.

**GUN CLUB (days), Carl Turner**  
Meet 3rd Wednesdays, 7:30 p.m. Pistol shoot at Torrance September 14, 2 p.m. Rifle shoot at Torrance September 28, 1 p.m.

**MIXED CHORUS, Burt Bracher**  
Meet Tuesdays, 7:30 p.m. All Norcrafters welcome.

**MODEL RAILROAD, Jack Wilson**  
Meet in Annex Thursdays, 7:10 p.m. Visitors welcome. Need electricians, carpenters & scenic artists to help with new layout.

**PHILATELIC CLUB, Eugene Richardson**  
Meet 2nd & 4th Mondays, 7 p.m.

**RADIO CLUB (days), Andy Dolak**  
Meet last Thursdays, 7:30 p.m. Radio code class meets Wednesdays, 7:30 p.m. NRC's station is W6VPZ.

**RADIO CLUB (nights), Merwin McGrew**  
Meet last Thursdays, 1:30 p.m.

**SKATE CLUB, Dan Kawashima**  
Meet alternate Saturdays at Long Beach Dominguez Gun Club on Artesia Blvd. September 13 & 27, 10:30 a.m.

**SKIN DIVING (days), Ralph Gonzales**  
Meet 3rd Mondays, 7:30 p.m.

**SKIN DIVING (nights), Lillian Kemble**  
Meet 3rd Wednesdays, 1 p.m.

**SOFTBALL (days), Ken Klier**  
League playoffs in progress.

**SPORTS CAR CLUB, Jack Kirkpatrick**  
Meet 2nd Thursdays, 7:30 p.m.

**SQUARE DANCING, Roy Jackson**  
Beginners' class 2nd, 3rd & 4th Sundays at Gardena Barn, 15016 Daphne, 3-6 p.m.

**SURF FISHING, John Pawlicki**  
Meet 1st Tuesdays, 7:30 p.m.

**TABLE TENNIS, Robert Burke**  
League play Wednesdays, 5 p.m.

**TOASTMASTERS 212 (days), John Walker**  
Meet at Western Avenue Country Club Thursdays, 6:30 p.m.

**TOASTMASTERS 1398 (nights), Sam Grutis**  
Meet at Western Avenue Country Club.

**TOASTMASTERS 2583 (days), Howard Grutis**  
Meet at Western Avenue Country Club.

**TOASTMASTERS 2583 (days), Howard Cornelius**  
Meet at Kim's Restaurant Mondays, 6:15 p.m.

### FOR THE LADIES

**BOWLING (days), Jean Sittauer**  
**BOWLING (nights), Mary Mimnaugh**  
Winter leagues starting.

**GIRL SCOUTS, Dallas Vasquez**  
Mariners, Intermediates, Brownies. All Norcrafters girls welcome.

**TOASTMASTRESS, Marge Gates**  
Meet in NRC Clubhouse Board Room 1st & 3rd Thursdays, 7 p.m.

## Salute to T-38 Men

All Norcrafters had a hand in bringing the T-38 into being and this means thousands of people. But as in all projects, certain ones perform key roles.

The following 15 have been nominated as key men on the T-38 trainer. Hard work, long hours, high responsibility, many sessions at the planning boards mark their efforts. And each one would be the first to suggest another's name in place of his own.

Stan Erbeck



Weapon system project engineer—with Northrop 19 years . . . Hancock College of Aeronautics . . . aeronautical engineering . . . 22 years experience in aircraft engineering . . . was project engineer on the Scorpion F-89.

Moke Ross



Project manager, manned weapon systems—with Northrop four years . . . Southeastern University . . . degree in mechanical engineering . . . five years experience in Washington CAA agencies.

Rex Thornhill



Project superintendent—with Northrop 19 years . . . extensive factory, flight, and experimental flight experience . . . Advanced project specialist.

Bert Pryor



Project coordinator, Materiel—with Northrop 15 years . . . 18 years experience in aircraft in subassembly, final assembly, and materiel projects.

Allen Graber



General foreman, prototype operations—with Northrop 15 years . . . many years experience in aircraft production, power plants, rigging and controls, advanced production projects.

Elmer Moore



General supervisor, prototype inspection—with Northrop 17 years . . . long years of inspection experience in fabrication, assembly, and in engine installation departments.

Larry Rothrock



Project flight test engineer—with Northrop 11 years . . . graduate of Purdue University . . . degree in airplane and engine design.

Tom McCracken



Project coordinator, Manufacturing—with Northrop five years . . . 30 years experience in aircraft in England, Canada, U. S. . . . works manager specialist . . . educated Imperial Technical College, Kensington, England . . . metallurgy and thermodynamics.

John Couberly



Assistant project engineer—with Northrop five years in Engineering projects . . . University of Washington . . . degree in aeronautical engineering . . . United States Air Force fighter pilot.

Harry Parker



Assistant project engineer—with Northrop 16 years . . . has been associated with engineering projects, liaison and project office on all Northrop airplanes including the P-61 Black Widow and the F-89 Scorpion.

Phil Rea



Assistant project coordinator, Manufacturing Control—with Northrop nine years . . . expediting specialist with long background experience on missiles and other Northrop products.

Louis Holmes



Manufacturing program planner—with Northrop Aircraft seven years . . . 30 years experience in aircraft industry in manufacturing, test, quality control.

Jess Shipley



Supervisor, Quality Control—with Northrop 18 years . . . University of Illinois . . . 16 years experience in aircraft, inspection, production, and shipping departments.

Sherman Turner



General foreman—with Northrop 19 years . . . many years experience in manufacturing, assembly, and high speed production projects.

Bill Bruschaber



Tool project engineer—with Northrop 11 years . . . University of Southern California . . . power plant installation and test . . . 18 years in aircraft in tool planning, experimental, and production.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Items advertised in "For Sale" and "For Sale or Trade" categories are limited to a maximum of \$50. Price must be stated.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish

calls. Replies to box numbers are to be in writing. Box number replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

### FOR SALE

PLAY HOUSE, 6'x8'x5', collapsible, \$38. FR 5-6665. A

DRUM, metal snare-type, w/stand, \$20. Box 2406. A

BED, queen-size, innerspring mattress, box spring, frame, \$45. FR 9-9616. A

ANTIQUE DISHES, \$15-\$2. GR 7-1539. A

LAMP, 30" provincial-type, washable shade, \$10. FR 5-8245. A

TV TABLE, swivel-top-type, \$5. OS 5-9740. A

STUDIO COUCH, w/bolsters, \$50. FR 6-5392. A

DARK ROOM OUTFIT, enlarger, Mark II; lens, 90.8-mm; trays; timer; cutting board; \$50. Box 2404. A

GUN, Colt Model 1902 .38 automatic, \$35. EA 2-4508. A

DIVAN, grey 2-cushion, \$15. FR 5-7810. A

WEDDING SET, interlocking rings, white gold, diamonds, \$50. PL 9-6788. A

GUN, Luger 9-mm, holster, \$50. PL 2-9597. A

TRAILER, Allstate 1-wheel, \$35. OS 5-6115. A

BINOCULARS, 16x50, \$34. OS 9-3037. A

POWER MOWER, \$20. FR 5-2959. A

BOOKS, Basic Television, Grab; Accounting Principles, Noble & Niswonger; \$1 ea. PL 7-3774. A

FURNITURE, davenport, coffee table, \$20. GA 3-1363. A

PUPS, boxer, fawn & brindle, pedigreed AKC, \$50. DA 4-6053. A

DRYER, Westinghouse electric, 220V, \$45. DA 9-2782. A

DOG, Shetland sheepdog (toy collie), 7-mo-old, sable & white, pedigreed, champion stock, AKC, \$50. DA 3-4635 in a.m. A

STOVE, Wedgwood 4-burner, \$25. CF 1-1486. A

ROLLER SKATES, Chicago shoe-type, boy's size 6 black, w/stoppers, \$9. FF 2-3822. A

BIRD, tropical toucanette, young, \$50. FR 2-6585. A

RECORD PLAYER, Steelman portable, \$10. DA 3-1479. A

GYM MEMBERSHIP, Silhouette 9-mo. \$18. DA 4-5824. A

PEACE OFFICER EQUIPMENT, Sam Brown belt, size 36; handcuffs, case; holster; \$20. OR 1-1660. A

MOTOR, West Bend 2723 2.5-hp aas \$17.50. HA 9-5445. A

CHAIR, contour-type, green frieze, \$45. DA 9-2847. A

TOASTERS, Westinghouse automatic, Toastmaster automatic, \$15 ea. PL 5-4025. A

WINDOW FAN, 20", 3-speed reversible motor, fits 27"-37" window, \$20. FR 5-6407. A

PUPS, beagle, thorobred; female, \$10; male. \$15. DA 4-4352. A

PUPS, beagle, AKC, \$35. PL 8-9514. A

WATER SKI, Voit 6' banana-type, \$20. OS 6-3319. A

### FOR SALE

COOLER, 1- or 2-room, \$20. ST 5-6097. A

STENOTYPE, Master Model 4, w/case, \$25. FR 4-1616. A

ELBOW CRUTCHES, alum., adjustable \$10. Box 2403. A

SPORT COAT, man's size 36, \$5. OS 5-6747. A

PATIO FURNITURE, redwood, round table, 2 benches, \$12. EX 8-4032. A

ELECTRONIC EQUIPMENT, transmitter, Signal Corps BC458A, \$10; equipment rack, 6'x19", \$15. OR 8-8326. A

JOINTER, 6", \$50. Box 2401. A

LOVE SEAT, antique, solid mahogany, rose upholstery, \$50. Box 2402. A

REFRIGERATOR, Coldspot, \$35. DA 3-5497 before 3 p.m. A

CAR COOLER, window-type, \$5. FA 8-3485. A

RUG, 9'x12' grey twist broadloom, \$40. OR 4-4032. A

WASHER, Kenmore, \$25. Box 2407. A

### WANTED TO BUY

COTTON SAIL, for 8' dinghy w/grooved mast & boom. FR 5-5298. B

PIANO, small upright. UN 3-5196. B

SHOP EQUIPMENT, grinder, self-powered bench-type; diacral bender, Model 1 or 2. Box 2405. B

SLIDE RULE, 12". NE 8-5691. B

GOLF CLUBS, left-hand-type. HA 9-5445. B

ELECTRONIC EQUIPMENT, inverter, 6V, 35-watt output; Vocaline Transceiver, 6V. FR 4-6687. B

### FOR TRADE

MERCURY, 1957 hardtop coupe, black power brakes, Turnpike Cruiser engine, trade equity for transportation car. DA 9-3495. C

METAL LOCATOR, Army-type, trade for 8-mm movie projector. FR 4-4929. C

**FREE (to be given away)**

DOGS, German shepherd, obedience-trained. GL 4-7338. D

KITTENS, part Persian. FR 6-1670. D

### RENTALS WANTED

HOUSE, 3-bdrm, unfurnished, within 2 blocks of ocean, 2-car garage, lease. FR 9-9616. F

HOUSE, 2- or 3-bdrm, Lakewood or North Long Beach area. UN 3-5196. F

HOUSE, 3-bdrm, unfurnished, 2-car garage, prefer Leuzinger Hi area, lease. OS 5-1684. F

### CHILD CARE OFFERED

BABYSITTING, days or nites. OS 5-6285. F

### FOUND

BABY CLOTHES, play suits, diapers, corduroy pants, found at Holidayland day of Funstival, DA 3-3163. K

### PERSONALS

RIDER WANTED, 2, Kansas City Sept. 5 return trip Sept. 19, share expenses. FR 2-0356. L

### FOR SALE OR TRADE

DIATHERMY MACHINE, power supply or TVI rig, \$25 or trade. EX 8-5201. M

POWER MOWER, reel-type, \$30 or trade for hand mower, tools. FR 4-2188. M

STEEL GUITAR, Gibson Hawaiian-type, \$50 or trade for standard guitar. DA 6-5194. M

## Share the Ride

### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 4)

LA MIRADA & CENTRAL, La Habra. T. S. MAXWELL (5962-24039, ext. 2649). OW 7-3150. 2-4

(Zone 8)

NORMANDIE & 254th ST., Harbor City. M. E. MILLSAP (5503-42579, ext. 1385). 2-4

(Zone 10)

OCEAN GATE & SHOUP, Hawthorne. BETTY EVANS (5561-22579, ext. 1280). 2-4

7:30 a.m. — 4:15 p.m.

(Zone 2)

CRENSHAW & IMPERIAL, Inglewood. VIRGINIA EASTMAN (1421-53703, ext. 1811). 3-2

8:00 a.m. — 4:45 p.m.

(Zone 1)

SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 5-1

(Zone 5)

CARSON & WOODRUFF, Long Beach. (Desire car pool.) V. L. JOHNSON (3483-24069, ext. 1691). HA 9-8990. 5-5

3:45 p.m. — 12:15 a.m.

CENTRAL & HOLT, Ontario. (Established car pool.) H. M. THEURER (7721-11895, ext. 2054). 6-4

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 4)

PAINTER & WHITTIER BLVD., Whittier. (Via Florence, Imperial Hwy or Rosecrans.) R. L. DEALY (5450-44690, ext. 2363). OX 6-8573. 12-4

8:00 a.m. — 4:45 p.m.

(Zone 1)

SANTA MONICA BLVD. & WESTERN, Hollywood. (Consider car pool.) HAROLD GREER (3242-53657, ext. 2775). HO 4-6094. 15-1

(Zone 5)

CARSON & WOODRUFF, Long Beach. (Desire car pool.) V. L. JOHNSON (3483-24069, ext. 1691). HA 9-8990. 15-5

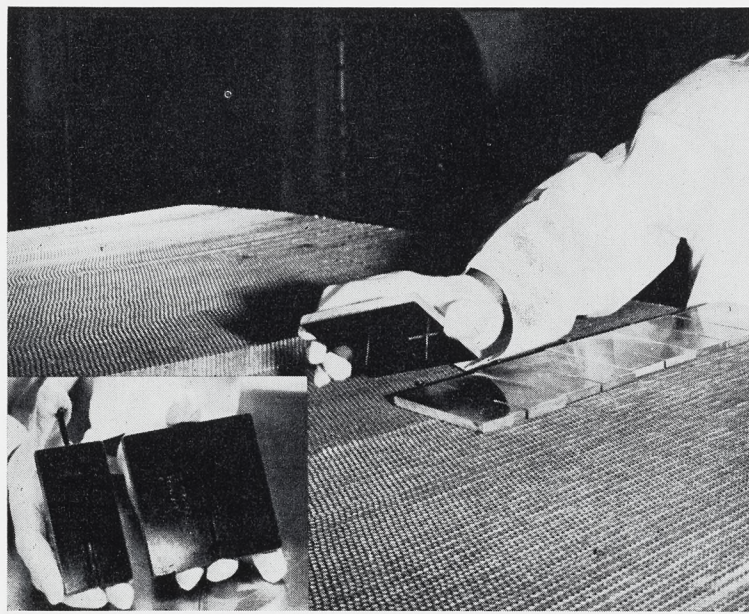
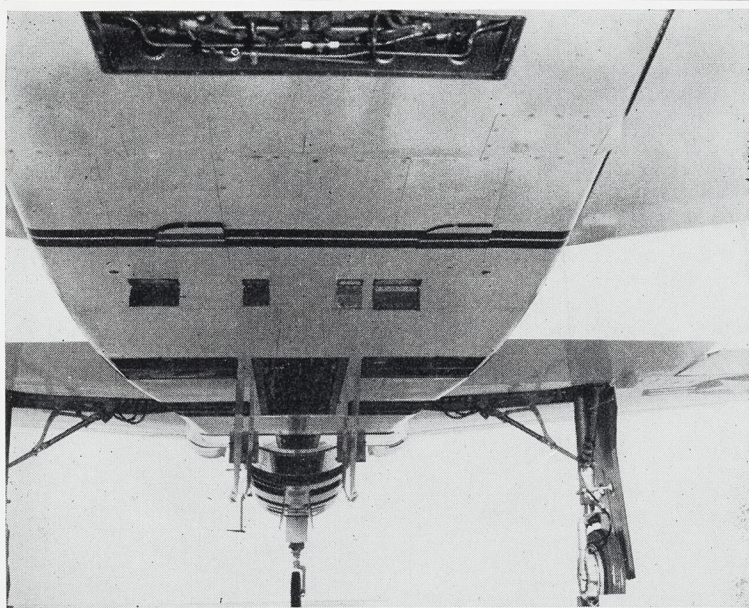
3:45 p.m. — 12:15 a.m.

(Zone 7)

CENTRAL & HOLT, Ontario. (Established car pool.) H. M. THEURER (7721-11895, ext. 2054). 16-4

ANAHEIM ST. & RONAN, Wilmington. JOE HARMON (5353-41372, ext. 2678). TE 5-3221. 16-7





## T-38 Timetable

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# The Lightweight Concept Explained

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The need for continual improvement in performance has resulted in a pervading tendency in the development of new weapon systems to produce corresponding increases in weapon system size and complexity. The attendant development and procurement costs, higher operating costs, reduced

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By **WELKO E. GASICH**  
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With the design objective and the available state-of-art, Northrop established the following criteria:

1. Simplicity
2. Maintainability
3. Producibility
4. Safety
5. Light weight

It was the purpose of these design criteria to formulate specific requirements which would control the overall design philosophy. The basic requirement conformed with the corporate objective of maximum training at the lowest possible cost.

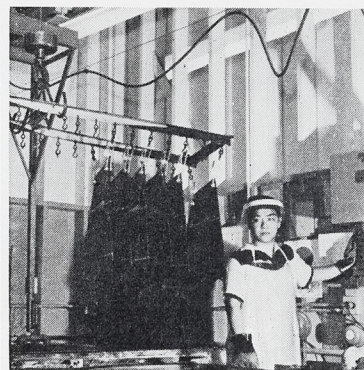
(Mr. Gasich's report explains in detail how these design criteria were successfully realized in the lightweight family. Copies of the report may be obtained from the Northrop News Office.

**EASY ACCESS**—means simple low-cost maintenance.

reliability and operability, and increased maintenance.

This trend of ever-increasing size and complexity to meet performance requirements has become so prevalent that the ability to procure sufficient numbers and to operate effectively many of the more advanced aerial systems is a matter of utmost concern to both budgetary and military planners alike. The achievement of less

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A prime example of the industry's progress in meeting this challenge is the development and exploitation of the new high thrust-to-weight ratio turbojet engines.

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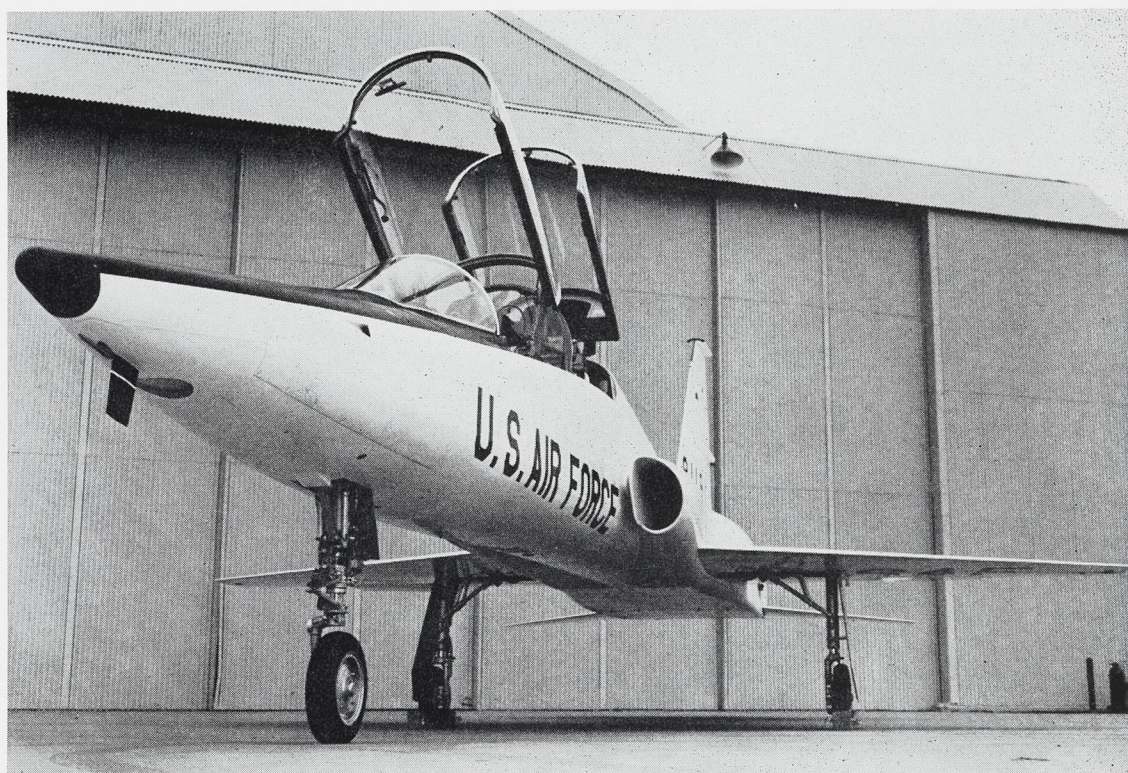
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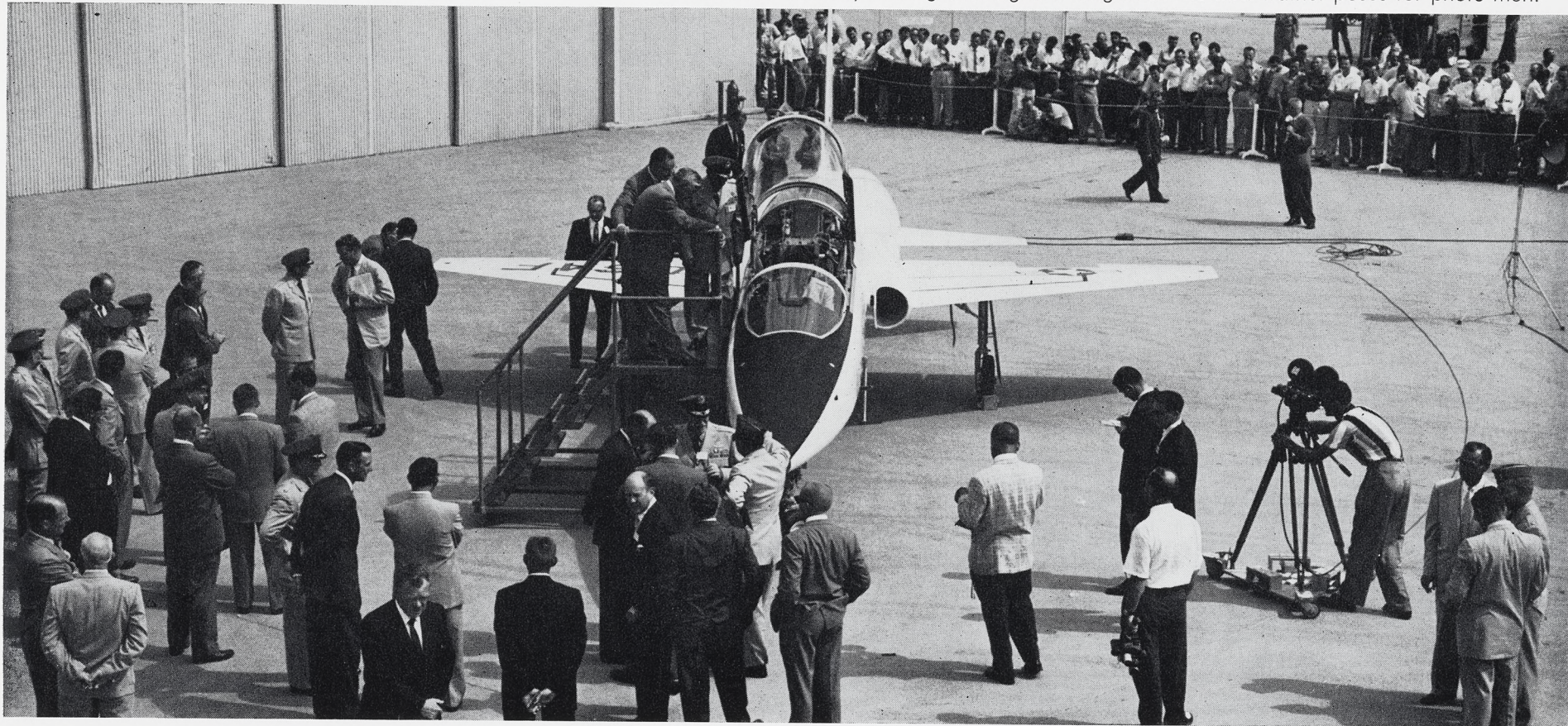


**FOR STUDENT AND INSTRUCTOR**—Separate canopies are added safety factor. Note clean lines. Yet there is ample cockpit width to accommodate each pilot in space suit.



## They Came and They Saw . . .

**CLOSE LOOK**—Guests and members of the press in attendance profit from opportunity for close look at T-38 immediately after rollout. Cameras, both still and movie, had little difficulty finding exciting new angles as the new trainer poses for photo men.



### *T-38 Rollout Pictorial*



**COCKPIT TRYOUT**—Maj. General Carl A. Brandt, acting commander, Air Training Command, tries T-38 cockpit. Watching is Maj. General Wiley D. Ganey, special assistant to the Vice Commander, ATC. Two-piece canopy makes T-38 excellent for instrumentation training during which instructor looks out while student flies blind.



**T-38 CAPABILITY**—from left, Lt. General Charles T. Myers (USAF, retired), former Commander, ATC; T. V. Jones, senior Corporate vice-president; and Colonel Jerry D. Page, director of Plans and Operations, ATC. Discussion covered long range implications of lightweight concept.

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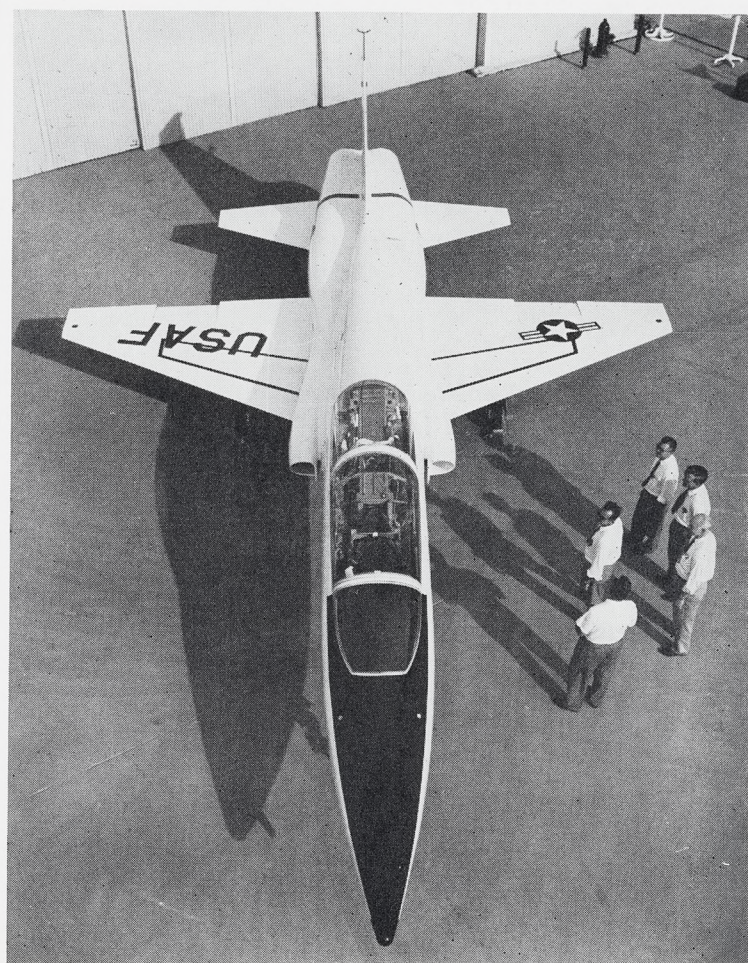


**GOOD MANAGEMENT**—Lt. General Clarence S. Irvine, Deputy Chief of Staff, Materiel, confers with Robert R. Miller, senior Corporate vice-president, prior to rollout ceremonies. General Irvine is a firm advocate of an efficient management in handling government contracts.

**NAVY**—Rear Admiral Truman J. Hedding, U.S. Navy Bureau of Aeronautics General representative, Western Division, tries out T-38 cockpit. Assistant BAGR, Captain G. A. Hatton and President Collins look on.



**SUPERSONIC** — Overhead view of T-38 illustrates "coke-bottle curve." Application of area rule provides major improvement in high speed flight performance.

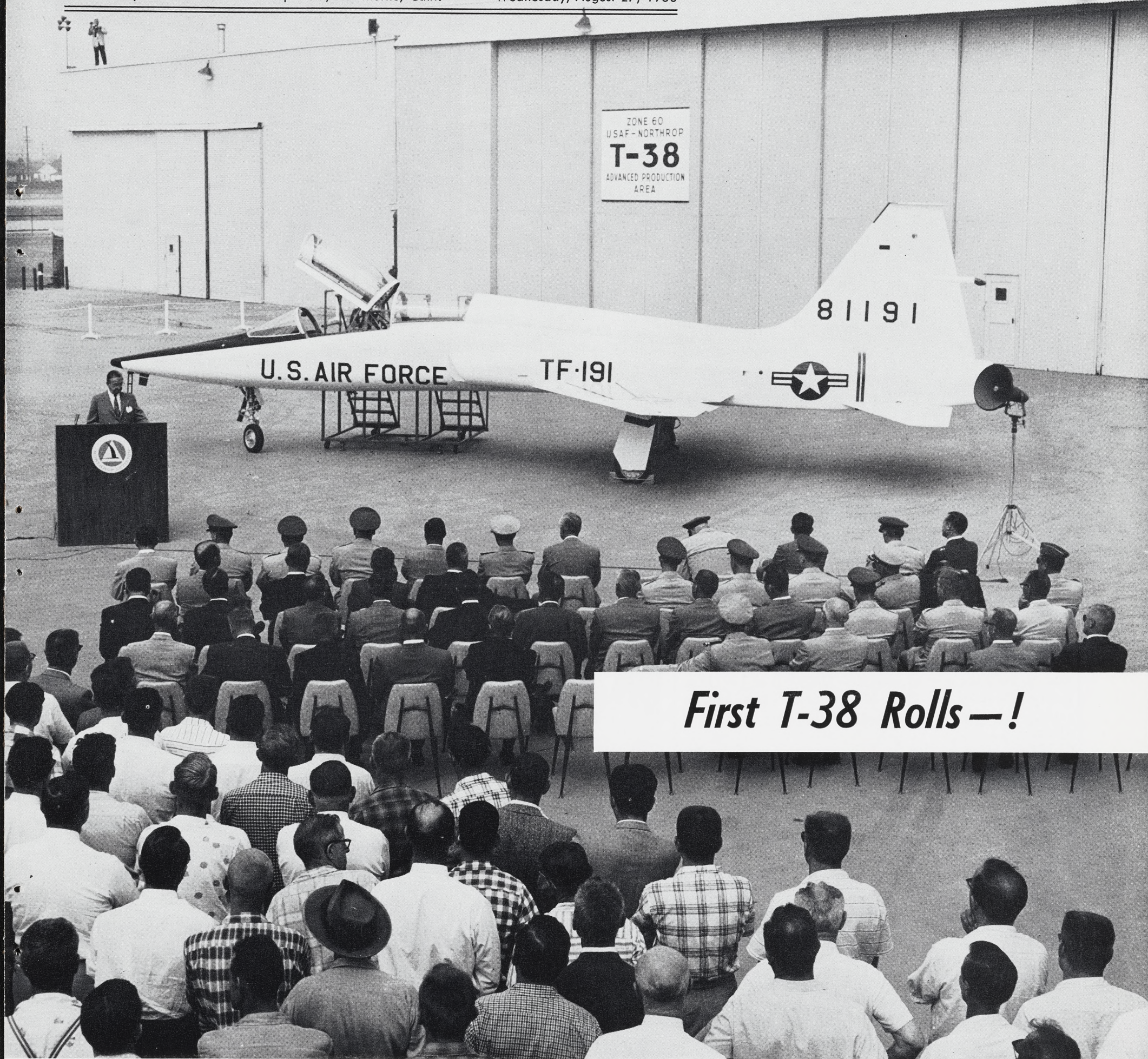




# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, August 27, 1958



## *First T-38 Rolls—!*

**T-38 ROLLOUT DIGNITARIES**—Front row, from left: T. V. Jones, senior vice-president, Northrop Aircraft, Inc.; Brig. General Marcus F. Cooper, commander, Flight Test Center, Edwards Air Force Base; R. R. Nolan, Northrop corporate vice-president and general manager, Northrop Division; Lt. General Clarence S. Irvine, deputy chief of staff for Materiel, USAF; Whitley C. Collins, president, Northrop Aircraft, Inc.; Lt. General Charles T. Myers, retired, until recently commander, Air Training Command; Rear Admiral

Truman J. Hedding, U.S. Navy Bureau of Aeronautics general representative, Western Division; Dr. William F. Ballhaus, Northrop corporate vice-president and general manager, Nortronics Division; Maj. General Carl A. Brandt, acting commander, ATC; Major General Wiley D. Ganey, assistant to vice-commander, ATC; Colonel Jerry D. Page, director of Plans and Operations, ATC; and Edgar Schmued, consultant to Northrop. Assembly hailed rollout of T-38 — nation's first lightweight supersonic trainer aircraft.





# Rollout of First Air Force T-38 Signals New Era of Flight Training

The first U. S. Air Force T-38 supersonic trainer rolled off the advanced - production assembly line August 15, four days ahead of schedule.

Designed to train pilots for a new generation of space age craft as well as conventional fighter and bomber missions, the T-38 is being produced in evaluation quantities by the company's Northrop Division.

Military and Northrop officials viewed the gleaming white, twin-

jet craft today after it was rolled from its production hangar.

**Northrop President Whitely C. Collins commended Northrop project personnel on their fine schedule showing and on low cost achievements on the T-38 to date.**

John Alison, vice-president, Customer Relations, was master of ceremonies for the occasion.

Military visitors were headed by Lt. General C. S. Irvine, deputy chief of staff, Materiel; Major General Carl Brandt, acting commander, Air Training Command; and Rear Admiral Truman J. Hedding, U. S. Naval Bureau of Aeronautics, general representative, Western Division.

**General Irvine in speaking of the T-38 was quoted by the press as saying that "The T-38 is the finest bit of training equipment the Air Force has created," and that the "T-38 will train pilots for Century Series aircraft yet unborn . . . This is a great opportunity for people at Northrop," he concluded.**

The T-38 is the first trainer capable of delivering Century

Series fighter performance. It weighs one-half to two-thirds as much as operational fighters. Its small size and simplicity shrink the costs of production and operation.

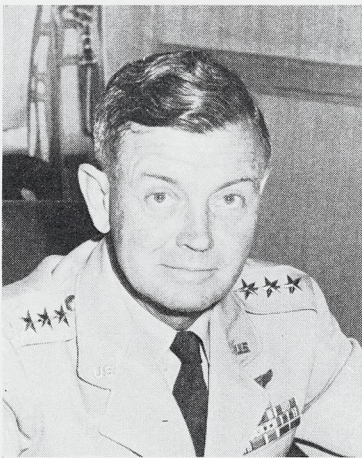
In parallel development is a counterair fighter version, the N-156F, designed to provide NATO, SEATO and other allied free nations with an effective air defense at low cost.

Chemically-fueled bombers, a new generation of fighters and boost-glide vehicles are expected to go into service within the operational life span of the T-38. Many of these craft will be flown by pilots who will acquire their first supersonic flight experience in T-38s.

Twin General Electric J-85 turbojet engines figure prominently in the Northrop concept of lightweight, high performance aircraft. These new powerplants have an exceptionally high thrust-to-weight ratio, making significant weight-saving possible in the design of the T-38.

Twin engine reliability is a strong safety factor in the T-38. In the event of engine failure during takeoff, the plane can complete its takeoff on one engine, climb to a safe altitude and return.

Each engine drives a separate hydraulic pump and electrical generator. In the event of engine failure, one engine can provide all electrical and hydraulic power



**GENERAL SMITH**  
New ATC Commander

required to complete the flight safely. Each J-85 has an independent fuel supply system, but all fuel can be sequenced to one engine.

Because of its light weight and relatively low landing speed, the T-38 requires no drag chute.

Instructor and student are seated tandem in individual pressurized, air conditioned cockpits enclosed by separate jettisonable canopies. The instructor is seated behind and 10 inches higher than the student to provide for proper surveillance and forward visibility.

The cockpits are fitted with ejection seats. In case bailout is necessary, the instructor is protected from wind blast by a transparent plastic panel during the interval between the student's ejection and his own.

T-38 fuselage lines are characterized by reverse or "coke bottle" curvature at the wing junction in conformance with the "area rule" theory of design. The wing is thin, short and moderately swept.

## GENERAL BRANDT

### ON THE T-38 . . .



#### TO ALL NORCRAFTERS:

*The supersonic high altitude flight performance of the newest fighters and bombers now becoming our first-line aircraft poses a new problem in flying training. The trainer used for the 1960 decade must be capable of training in high sink rates, supersonic flight, high altitude indoctrination, extreme attitudes in instrument flights, high altitude formation problems, and navigational problems brought about by high altitude flight and supersonic dashes. A new basic trainer, combining safety, simplicity and economy, and having combat performance characteristics, is required.*

*We believe the T-38 will satisfy this new training requirement. The performance capabilities of the T-38 will permit training in all 1960 decade requirements. No expensive tactical type aircraft will have to be used in the training program to bring the student up to the level of proficiency demanded by the combat vehicle of this era.*

**Major General Carl A. Brandt,**  
Acting Commander  
Air Training Command

## Northrop News Editorial

### A New Generation

Men of this nation have their eyes on space. Especially young men. And these times are like other times in the history of mankind when new frontiers beckoned.

Actually new frontiers do more than beckon. They impel.

Space is next. In fact it is here.

Friday, August 15, a beautiful white airplane came into the sun. The ponderous doors of the Advanced Production building opened, and Rex Thornhill and his boys gently ushered the T-38 USAF trainer out onto the concrete. The airplane was long and low and lean. And clean.

There was a sudden hush in conversation from the large crowd of Air Force, Navy and Northrop officials.

The airplane looked like speed and action. It was a symphony of man's accumulated knowledge about the things he builds that fly. And it was more beautiful than ever because it was an instrument of teaching, of knowledge.

Her supersonic speed, her obedient willingness in the air, her ability to live safely with the inadvertent errors of the fledgling space man, are things that will endear her to the annals of flight for years to come.

The T-38 will mother a new generation of flying men. Young men. Some of them are on the sandlots at this moment, being Dodgers against the Giants.

It gives pilots great pleasure to say good things about their hardware. On alert, during the long hours of standby, in the mess halls, the T-38 will take her place when men talk flying. She will be a leading lady in this ever unfolding story of men and the sky.

The Air Training Command is a proud and honored organization. The fighter men, the bomber men, and the transport men of today first tried their wings under ATC's watchful, and sometimes anxious, eye. And the space men of tomorrow will learn their way along the lonely astral paths at ATC.

Air Force men are strong men. And, as is the way with strong men, much stern and rugged stuff will be expected of the T-38.

Norcrafter have built a strong and rugged airplane. She looks like a lady. She is a lady. But under her clean-lined exterior there is the toughness and reliability and work-horse capability that it takes. She will hold her own and more in that great high blue classroom where young American pilots will learn their three Rs of space.

## A History of the ATC

By **SECOND LIEUTENANT DAVID Y. BURKETT**

Air Training Command last month celebrated its 15th birthday.

In 1943, the AAF Training Command under Lt. Gen. Barton K. Yount consisted of more than a million people—divided almost evenly between students and permanent party, six subordinate commands and 600 training installations.

Training strength was at its peak during World War II; half the installations were devoted to flying training activities alone.

Then, demobilization brought a striking reduction in Command strength.

### PILOTS TRAINED

From a high of 80,693 pilots trained in 1944, the Training Command was turning out only 344 in 1946. By December, 1945, the number of training stations had been reduced to 39.

The AAFTC became Air Training Command in 1947 when the Air Force became a separate organization. With the outbreak of hostilities in Korea in 1950, the Air Force expanded on an emergency basis, training rates shot skyward, and subcommands were reinstituted to care for the myriad of courses demanded by a military force in mobilization.

### KOREA

Additional bases were pressed into service, and ATC's structure expanded from 17 to 43 bases in the three years following the beginning of the Korea conflict.

Today, the Air Training Command conducts training at 26 bases scattered throughout the United States. In Fiscal Year 1957, more than 135,000 men and women graduated from ATC's technical schools beyond basic military training. Another 21,000 graduated from flying training courses, and an additional 19,000 from crew training.

ATC is currently conducting or programming courses on 14

separate missile weapon systems including the Snark.

Besides flying and technical training leading to qualification in a skill required by the Air Force, ATC also

### MANY DUTIES

—operates basic military training courses for new recruits, refresher courses for reenlistees, pre-flight courses for ROTC graduates and aviation cadets, and the Officer Candidate School for future officers.

—takes the classroom to students at bases throughout the world, by way of the 3499th Field Training Wing, to give additional instruction and specialized training.

—conducts the large majority of AF recruiting through its 3500th USAF Recruiting Wing with headquarters at Wright-Patterson AFB.

Lt. Gen. Charles T. Myers has

(See photo, Page 1)

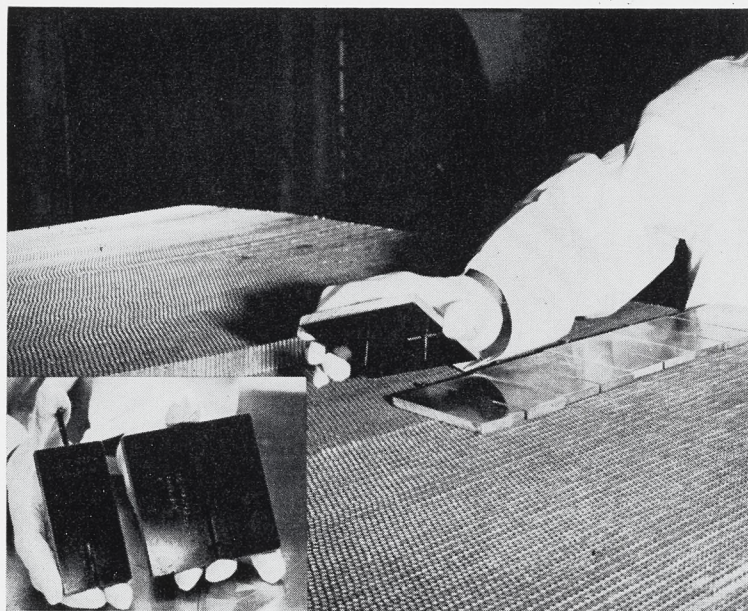
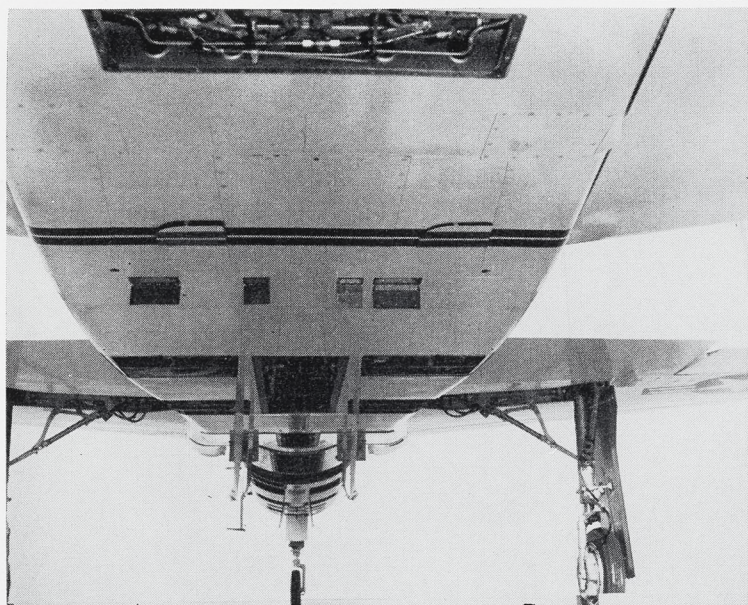
guided ATC in the accomplishment of its complex mission since 1954. Under his direction, ATC's organizational structure was revised into a more centralized and more efficient peacetime operation. One of the most significant steps was the recent discontinuation of ATC's three subordinate commands. Their responsibilities have been assumed by a reorganized Command headquarters at Randolph AFB. General Myers retired from the Air Force with high honors on 31 July 1958.

### GENERAL SMITH

Lt. Gen. Frederic H. Smith, jr., named as ATC's new Commander, will assume duties later this summer.

The product of ATC is people, trained to think and trained in the skills necessary for modern defense. On its fifteenth birthday, Air Training Command remains the largest schoolhouse in the free world — dedicated to producing the quantity and quality of men needed by today's Air Force.





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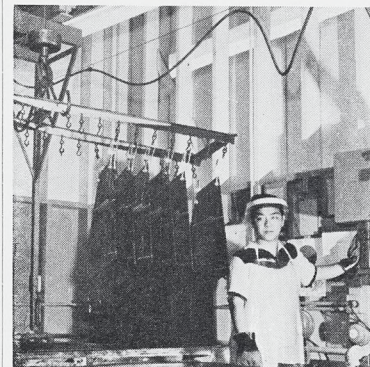
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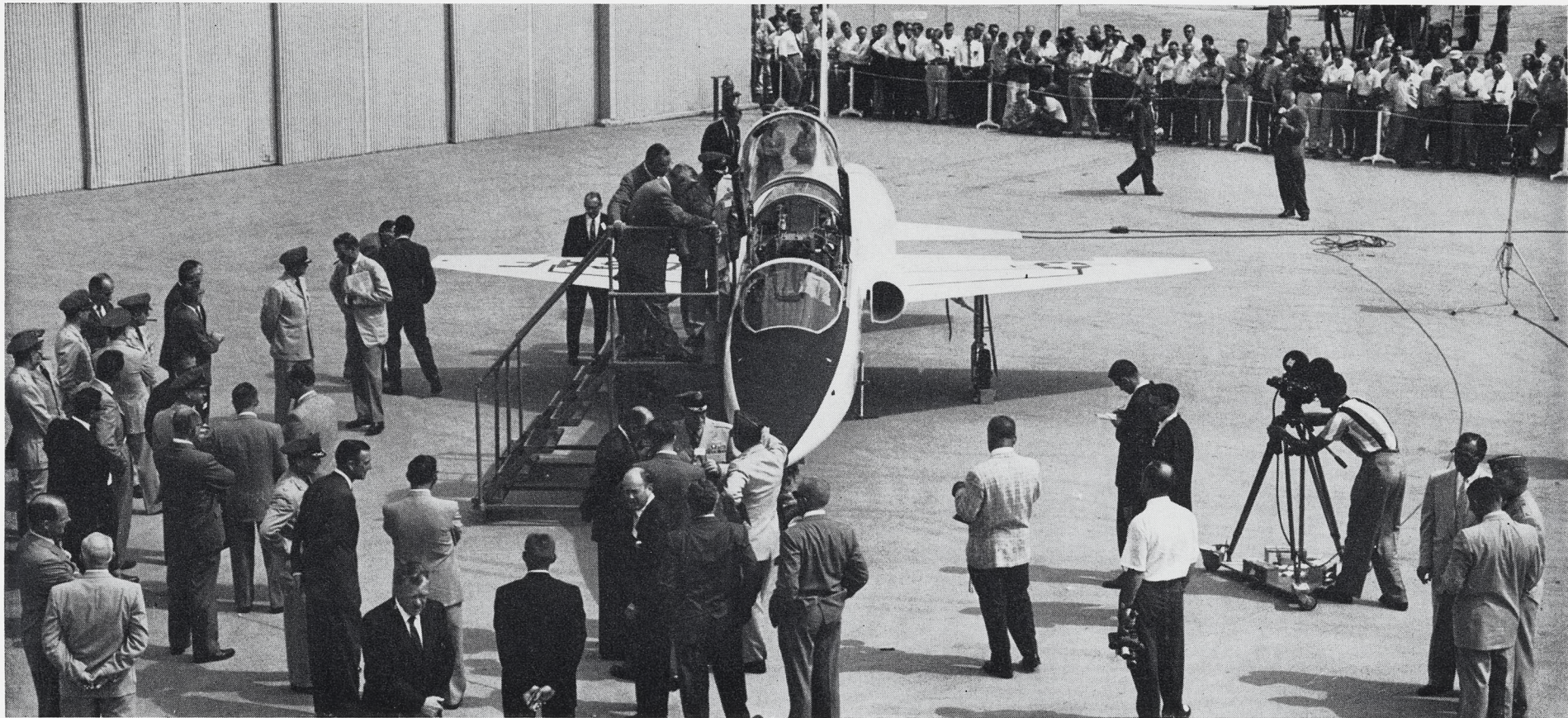


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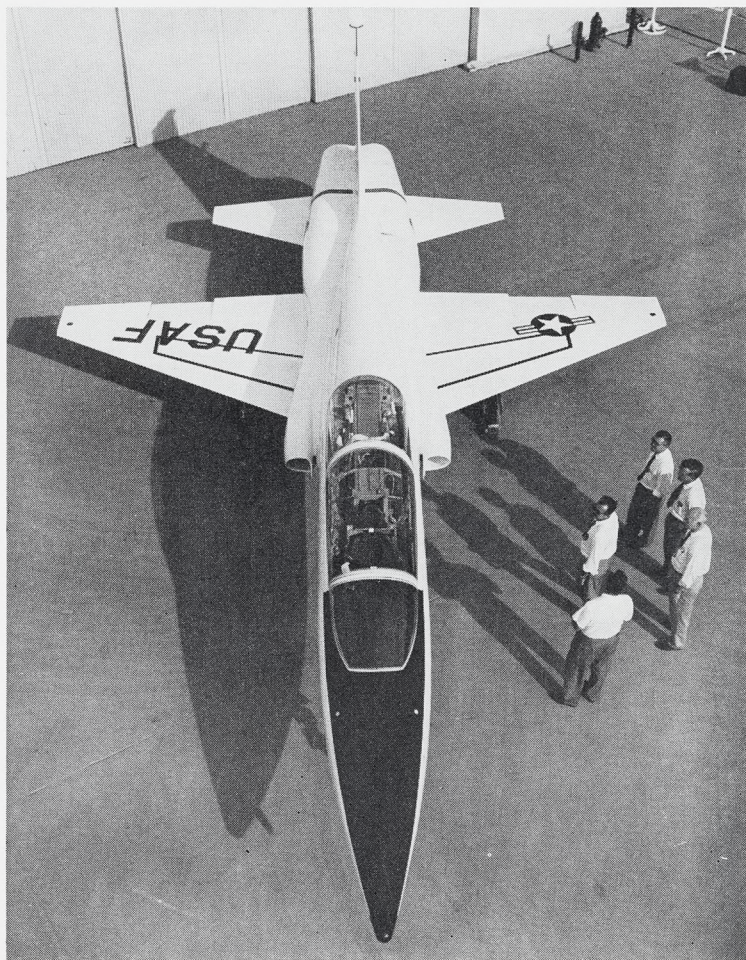


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ZONE 60  
USAF - NORTHROP  
**T-38**  
ADVANCED PRODUCTION  
AREA



*Northrop*  *News*

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif.

Wednesday, August 27, 1958

*T-38 Rollout Commemorative Issue  
International Edition*





**T-38 ROLLOUT DIGNITARIES**—Front row, from left: T. V. Jones, senior vice-president, Northrop Aircraft, Inc.; Brig. General Marcus F. Cooper, commander, Flight Test Center, Edwards Air Force Base; R. R. Nolan, Northrop corporate vice-president and general manager, Northrop Division; Lt. General Clarence S. Irvine, deputy chief of staff for Materiel, USAF; Whitley C. Collins, president, Northrop Aircraft, Inc.; Lt. General Charles T. Myers, retired, until recently commander, Air Training Command; Rear Admiral

Truman J. Hedding, U.S. Navy Bureau of Aeronautics general representative, Western Division; Dr. William F. Ballhaus, Northrop corporate vice-president and general manager, Nortronics Division; Maj. General Carl A. Brandt, acting commander, ATC; Major General Wiley D. Ganey, assistant to vice-commander, ATC; Colonel Jerry D. Page, director of Plans and Operations, ATC; and Edgar Schmued, consultant to Northrop. T-38 manufacture precedes that of related N-156F fighter design by about six months.

## First of New N-156 Family of High Performance Airplanes Rolls Out!

HAWTHORNE, California—The first U. S. Air Force T-38 supersonic trainer rolled off a Northrop Aircraft, Inc., advanced production assembly line August 15, four days ahead of schedule.

Designed to train pilots for a new generation of space age craft as well as conventional fighter and bomber missions, the T-38 is being produced in evaluation quantities by the company's Northrop Division.

The T-38 is a member of the Northrop-developed N-156 family of low cost, high performance aircraft which evolved from the design of the N-156F counterair fighter. The N-156F is designed to provide NATO, SEATO and other allied free nations with an effective defense at relatively low cost.

Although T-38 production precedes the manufacture of N-156F hardware by approximately six months, the trainer's design is rooted in the counterair fighter concept. This concept is based on exhaustive study of NATO and SEATO defense needs in relation to the economic environment of those nations.

Similarity and parallel development of the N-156F and the T-38 has resulted in a substantial saving of development cost for the fighter. For example, a significant portion of T-38 wind tunnel data is applicable to the N-156F. In addition, a high degree of parts of the two aircraft are interchangeable.

Northrop President Whitley C.



**GENERAL IRVINE**  
Heads Materiel Command

Collins presided at the rollout ceremony August 15 as military and Northrop officials viewed the

gleaming white, twin-jet T-38.

Military visitors were headed by Lt. General C. S. Irvine, deputy chief of staff, Materiel; Major General Carl Brandt, acting commander, Air Training Command; Brig. General Marcus F. Cooper, commander, Air Force Flight Test Center, Edwards Air Force Base, Air Research and Development Command; and Rear Admiral Truman J. Hedding, U. S. Naval Bureau of Aeronautics, general representative, Western Division.

In praising the Northrop engineering and manufacturing achievement, General Irvine said the T-38 is "the finest piece of training equipment the Air Force has ever developed, or even dreamed of" and that "the T-38 will train pilots for Century Series aircraft as yet unborn."

The T-38 is the first trainer capable of delivering Century Series fighter performance. It weighs one-half to two-thirds as much as operational fighters. Its small size and simplicity shrink the costs of production and operation.

Chemically-fueled bombers, a new generation of fighters and boost-glide vehicles are expected to go into service within the operational life span of the T-38. Many of these craft will be flown by pilots who will acquire their first supersonic flight experience in T-38s.

Twin General Electric J-85 turbojet engines figure prominently in the Northrop concept of lightweight, high performance aircraft. These new powerplants have an exceptionally high thrust-to-weight ratio, making signifi-

**SUPERSONIC** — Overhead view of T-38 illustrates "coke-bottle curve." T-38 and N-156F airplanes are small, as seen by comparing sizes of people with T-38 trainer in photo.

### GENERAL BRANDT ON THE T-38 . . .



*The supersonic high altitude flight performance of the newest fighters and bombers now becoming our first-line aircraft poses a new problem in flying training. The trainer used for the 1960 decade must be capable of training in high sink rates, supersonic flight, high altitude indoctrination, extreme attitudes in instrument flights, high altitude formation problems, and navigational problems brought about by high altitude flight and supersonic dashes. A new basic trainer, combining safety, simplicity and economy, and having combat performance characteristics, is required.*

*We believe the T-38 will satisfy this new training requirement. The performance capabilities of the T-38 will permit training in all 1960 decade requirements. No expensive tactical type aircraft will have to be used in the training program to bring the student up to the level of proficiency demanded by the combat vehicle of this era.*

**Major General Carl A. Brandt,**  
Acting Commander  
Air Training Command

cant weight-saving possible in the design of the T-38 and the N-156F.

Twin engine reliability is a strong safety factor in the T-38. In the event of engine failure during takeoff, the plane can complete its takeoff on one engine, climb to a safe altitude and return.

Because of its light weight and relatively low landing speed, the T-38 requires no drag chute.

Instructor and student are seat-

ed tandem in individual pressurized, air conditioned cockpits enclosed by separate jettisonable canopies. The instructor is seated behind and 10 inches higher than the student to provide for proper surveillance and forward visibility.

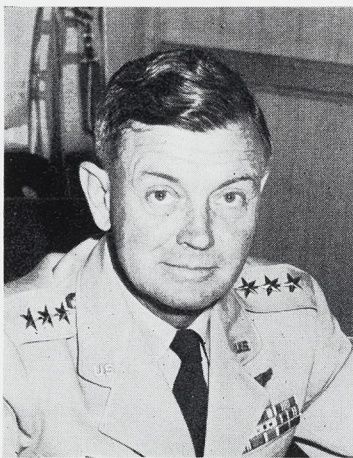
Fuselage lines of the T-38 and the N-156F are characterized by reverse or "coke bottle" curvature at the wing junction in conformance with the "area rule" theory of design. The wing is thin, short and moderately swept.

**Northrop News**

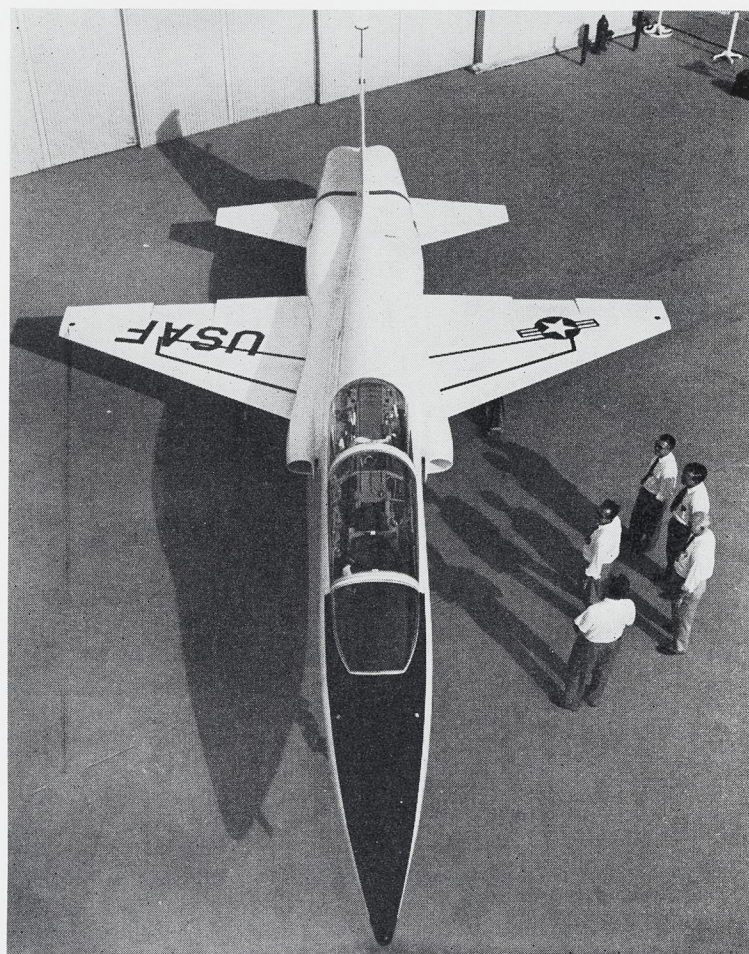
VOLUME 16 NUMBER 24B

PUBLISHED BIWEEKLY BY NORTHROP DIVISION OF NORTHROP AIRCRAFT, INC. THIS EDITION OF THE NORTHROP NEWS, COMMEMORATING THE ROLLOUT OF THE FIRST U. S. AIR FORCE T-38 SUPERSONIC JET TRAINER, IS DISTRIBUTED BY NORTHROP INTERNATIONAL. INQUIRIES SHOULD BE DIRECTED TO NORTHROP INTERNATIONAL, A DIVISION OF NORTHROP AIRCRAFT, INC., NORTHROP BUILDING, BEVERLY HILLS, CALIFORNIA, U. S. A.

FRANK W. PIERSON, EDITOR



**GENERAL SMITH**  
New ATC Commander





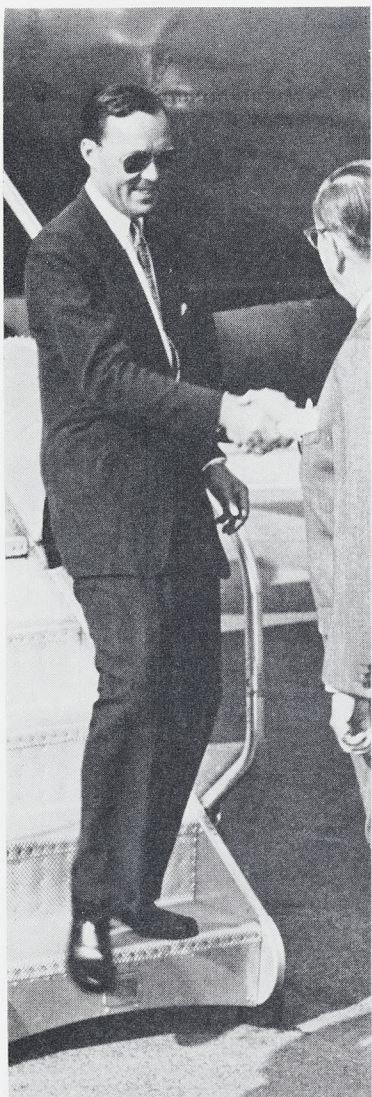
# Hands Across The Seas

Northrop International, the division of Northrop Aircraft, Inc. which is responsible for all overseas activities of the company, has hosted numerous visitors from abroad during the past several months. The visits have generally centered around authorized presentations relating to the company's new N-156F counterair fighter which is presently under development to meet the specific military needs of NATO, SEATO and other free allied nations.

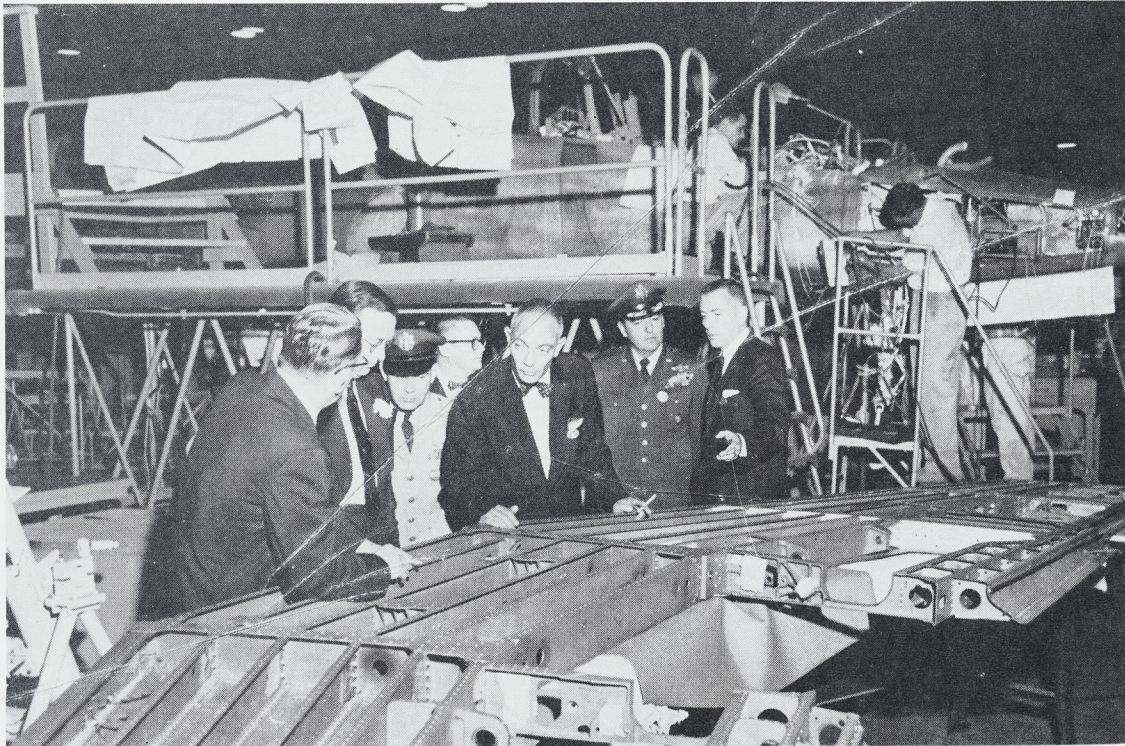
J. Gilbert Nettleton, jr., Northrop Aircraft, Inc. vice president and general manager of Northrop International, called together the key technical and management men of the company to carry out these briefings.

President Collins and many other officers of the company, including Richard R. Nolan, vice-president and general manager of Northrop Division, have also taken great personal interest in the visits, often participating directly in the discussions.

This and the next three pages of the edition present many of the distinguished visitors Northrop has been privileged to host. Ranks indicated are those which were current at time of visits.



**HRH PRINCE BERNHARD** of The Netherlands, stepping off the plane to be greeted by President Whitley C. Collins of Northrop, symbolizes the many visits by allied dignitaries which the company has been privileged to host. Prince Bernhard, a pilot himself and chairman of The Netherlands Joint Chiefs of Staff, is very active in military affairs not only in his own country but also among leaders of the free world.



## The Netherlands

**MANUFACTURE** outside the United States under licensing arrangement is envisioned for N-156F program. Prince Bernhard is one of most knowledgeable and articulate Europeans interested in this approach as basis for mutual security and economic evolution. Here seen with T-38 hardware, from left: R. R. Nolan, Northrop Division vice president and general manager; Prince Bernhard; Major Walter F. Stebens, jr., deputy AFPR; W. G. Stuart and Michael Creamer of Northrop; Colonel Godfrey McHugh, Headquarters, SHAPE; and J. Gilbert Nettleton, jr., vice president, general manager of Northrop International.



## Norway



**SCANDINAVIAN** at Northrop was Lt. General B. Fredrik Motzfeldt, commander-in-chief, Royal Norwegian Air Force. Norway was Northrop's first customer; purchased 24 of the early N-3PB patrol bombers which won fame in battle.

## Israel



**ISRAELI** visitor to Northrop for another reason than N-156F was Abraham A. Meiboom of Ministry of Labor. Mr. Meiboom's visit to Northrop was to study industrial safety practices.

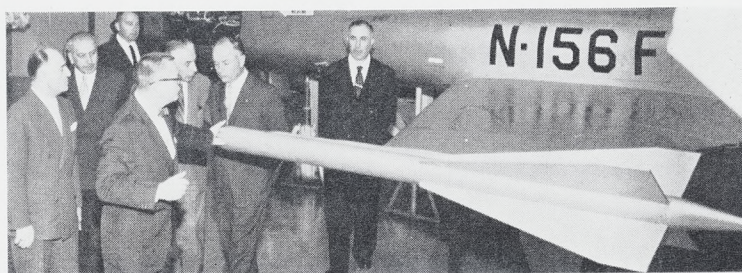
## Turkey



**GENERAL JULIAN RUBIO**, chief of Air Defense Command, Spanish Air Force, and party. From left: Patrick W. Timberlake, Northrop vice president; Major Oswaldo G. Guarnerio, USAF escort; Major Laura E.

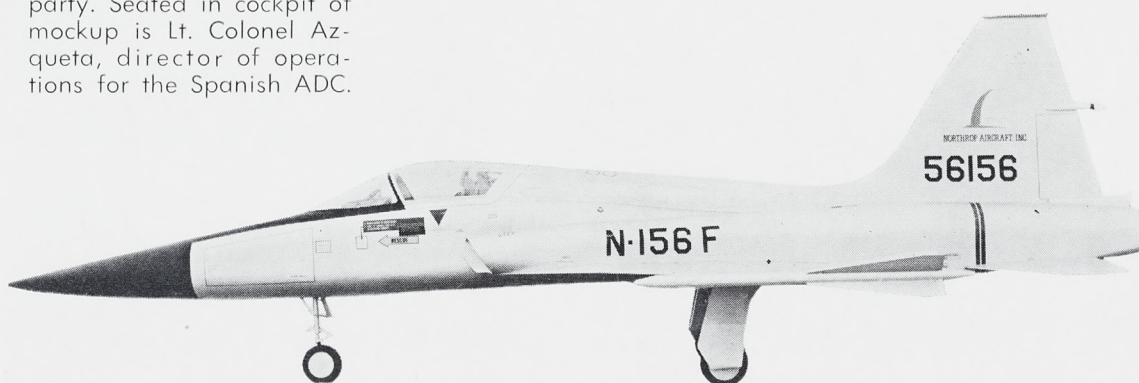
## Spain

Hearn, USAF, Spain; Major Jose Izquierdo, SADC; General Rubio; Major Manuel Alonso, SADC; Gwynn H. Robinson, Northrop International; and Lt. Colonel Luis Azqueta, Spanish ADC.



**LT. GENERAL SEGFI TURAGAY**, commander of the Air Materiel Command, Turkish Air Force, headed a delegation of military leaders from Turkey. At left, General Turagay, then Brig. General Zeki Belgin, commander, Air Training Command; Bill Pruitt and W. G. Stuart, Northrop; Brig. General Ihsan Mizanoglu, chief, Supply and Procurement; Brig. General Tansel Irfan, commander, First Tactical Air Force; and Colonel Mustafa Pekoz of the TAF.

**RAY GARDNER** of Northrop, right, explains N-156F features to General Rubio's party. Seated in cockpit of mockup is Lt. Colonel Azqueta, director of operations for the Spanish ADC.







**LT. GENERAL** Josef Kammhuber, chief of German Air Force, has visited Northrop twice. In conference from right to left: Edgar Schmued and President Whitley C. Collins of Northrop; General Kammhuber, Dr. Theodor Benecke; Colonel August Hentz; Lt. Colonel G. S. Hempel; and Captain Adam von Gliga, far left.



**RUDY KOSIN** of Northrop explains the N-156F to General Kammhuber, left; Captain von Gliga; Lt. Colonel Hempel; and Dr. H. G. Bauemker, back to camera. Mr. Kosin is familiar with German needs.



**DURING** previous visit to Northrop, camera caught General Kammhuber checking underside of mockup with Lt. Colonel Horst Merkwitz and Lt. Colonel Walter Horten, the three in center of photo from left.

## Germany

**BRIG. GENERAL WALTER PANITSKI**, of Federal Ministry of Defense, here seen in cockpit of T-38 mockup, headed another large German party during visit to Northrop and other U. S. contractors.

Professor Karl Thalau, Heinkel Aircraft Co., at left, discusses with Stan Erbeck, who heads Northrop T-38 project office.



**GENERAL PANITSKI's** party (General Panitski at center, with President Whitley C. Collins immediately right) included: from the German Federal Ministry of Defense, Dr. Helmut Kubler, Dr. Theodor Benecke, Dr. Ernst Schulze, Dipl. Ing. Albert Wahl and Dr. Fritz Engelmann. Civilian representatives with group included: Dr. Silvius Dornier of Dornier, Dr. Heinrich Triebnigg of Technical University Darmstadt, Dr. Otto E. Pabst of Belkow,

Dr. Bruno Eckert of Daimler-Benz, Dr. Karl Thalau of Heinkel, Dr. A. W. Quick of German Aviation Research Institute, Dr. Helmut Sachse of Bavarian Motor Works, Dr. Ing. Gunther Bock of Technical University Darmstadt. Escorting the group for the United States were Dr. A. G. Bauemker of the Department of State, and Lt. Colonel Ralph Nunziato, Major Robert J. Moffatt and Major Roy P. James, officers from Headquarters, United States Air Force.

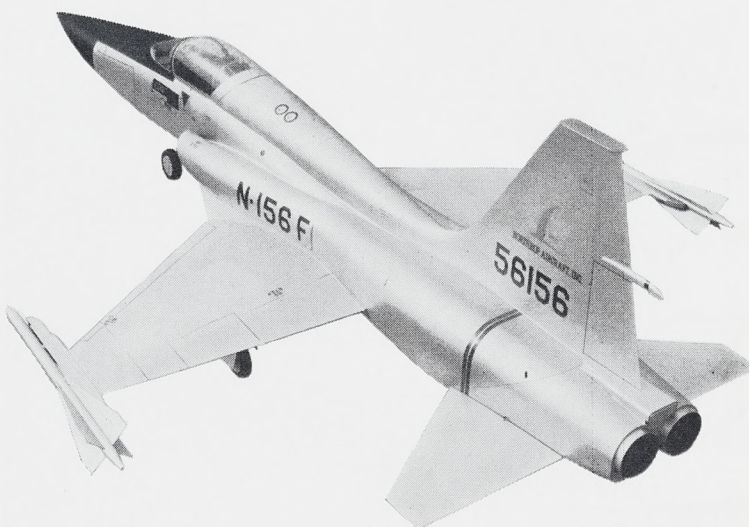


**GERMAN EVALUATION TEAM**—In mid-1957 a team of experts representing the German Federal Ministry of Defense were guests of Northrop for the purpose of evaluating the N-156F counterair fighter weapon system. The above series of photos show just a few of those who came. The team included four groups. Primarily interested in construction aerodynamics, manufacturing, maintenance and cost phases were Dipl. Ing. Kurt Deunert, Dr. Ing. Adolf Thiel, Dr. Ing. Adolf Gottmann, and Prof. Dr. Ing. Georg Madelung. Powerplant specialists included Dr. Ing. Ernst Beck and Prof.

Dr. Ing. Otto Lutz. Those concentrating upon weapon system, instrumentation, controls and electronics were Fl. Stabsing Karl Evers, Dipl. Ing. Wilhelm Lennep, Major Heinrich Schmetz, Dipl. Ing. Kurt Buhler, Min. Rat. Maximilian Bohlan and Major Karl Heinz Busch. Test pilots were Lt. Colonel Albert Werner and Captain Hans Knierer. Escorting the visitors were Lt. Colonel Horst Merkwitz, German Air Attache in Washington; Lt. Colonel Fred Jones of MAAG Germany; Lt. Colonel T. S. Coberly, Major Al Slay, Dr. A. G. Bauemker (at that time with ARDC) and Major Robert J. Moffatt of USAF.

**SWISS PARTY** was headed by Col. Divisionnaire (Maj. General) Etienne Primault, chief of staff, Swiss Air Force. With General Primault were Colonel Armin Ettinger, chief instructor, SAF Intelligence; Colonel Fritz Luethy, technical chief director of Military Airports; Lt. Colonel Erich Koenig, chief, Aviation Division, KTA Procurement Branch, Swiss Military Department; Lt. Colonel Richard Kisling, Officer General Staff, SAF; and Major Rolf Walther, assistant director, Federal Aircraft Factory, Emmen.

## Switzerland







## Greece



**ARRIVAL** of Air Major General Yoshiro Nagamori of Japanese Defense Agency, and greeting by Mr. Collins, reflects spirit of a series of visits by high-ranking officers and technicians of the Japanese military establishment. Mr. Nettleton is seen between the General and the Northrop president. Photo at bottom of page shows many in General's party.



**ELECTRICAL** experts visiting Northrop from Japan were Dr. Masatsugu Kobayashi, executive director of the Nippon Electric Company, seen at right. With Dr. Kobayashi was Mr. Y. Nakamaru, second from right. Kozo Fukushima of Northrop's Radioplane Division is at center. Left is Arch Wallen, factory manager of Northrop Division.



**COLONEL** Tatsuya Takaki, Aircraft Division of the Technical Research Institute, Japanese Defense Agency.

### GENERAL SANAGI

General Sanagi, chief of staff of the Japanese Air Self Defense Force, while not represented photographically on this page, is one of the ranking Japanese officers most concerned with evaluating the N-156F. Mr. Nettleton and others of Northrop have discussed the N-156F program at length with General Sanagi and his staff, both in Japan and the United States.

**WEEK OF T-38 ROLLOUT** was marked by two distinguished visits from abroad. From Greece came Maj. General Constantinos Geranopoulos, vice chief of staff, General Air Staff, Royal Hellenic Air Force, with party of four. Above, General Geranopoulos tries the N-156F cockpit. After Ray Gardner, left — Lt. Colonel Nicholas Sotiropoulos; Colonel Michael Kontolefas; Brig. General Spiridon Binas. Partially-hidden, right, is Brig. General Kyriakos Panagopoulos. Dark glasses — Bill Pruitt, Northrop Division.

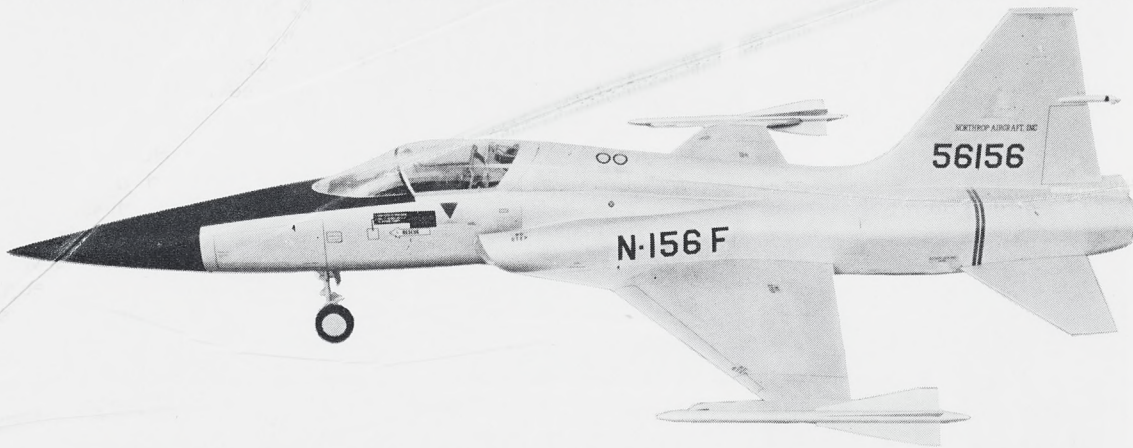
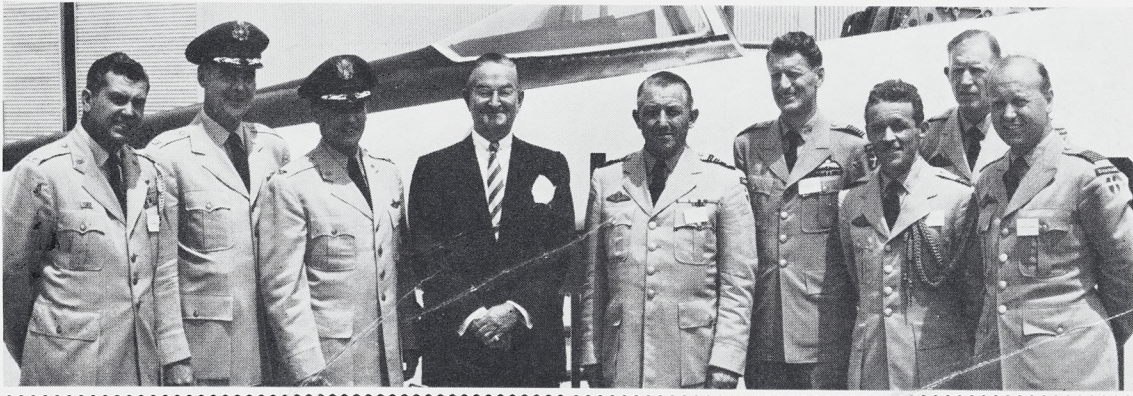
## Japan

**HEADING** another visit was Maj. General Takemasa Kihara, Aircraft Division of the Technical Research Institute, Japanese Defense Agency. With General Kihara were Colonel Mitsugu Kofukuda of the Planning Office, Colonel Tatsuya Takaki of the Aircraft Division, and Mr. Mokujiro Sue, chief of Scientific Research Division. Left to right: Irving Roth, assistant to The President, Northrop; General Kihara; Kozo Fukushima, Northrop; Mr. Sue; Dr. W. F. Balhaus, vice president and general manager, Nortronics Division.

**CAPTAIN** Goro Matsueda of the Technical Research Institute, Japanese Defense Agency, visited Northrop with a party. Photographed at wind tunnel are, from left: Kozo Fukushima, Northrop, then Kiro Ogawara, TRI, JDA; Captain Matsueda; Kazuhiko Yamamoto, Equipment Bureau, JDA; Dr. Ryoichi Nakai, Defense Bureau, JDA; Francis Brown and Kiyoshi Shinohara of The Nissho Company, which represents Northrop Aircraft in Japan.

**CONFERENCE** during General Nagamori's visit (see above) included members of JDA fighter aircraft evaluation team as follows: Colonel Shigeru Ura and Colonel Kiyoshi Masumoto of the Air Staff Office; Colonel Susumu Takaoka of Air Self Defense Force; and Messrs. Yohei Kawakami and Yasuhiro Matsuoka, Defense Agency. Colonel Masaji Takahashi, Air Attache of Japanese Embassy, Washington, and Claude C. Sturges of USAF MAAG-J, accompanied the group. Escorting from headquarters, USAF—Colonel Royce W. Priest and Lt. Colonel Allen K. McDonald.

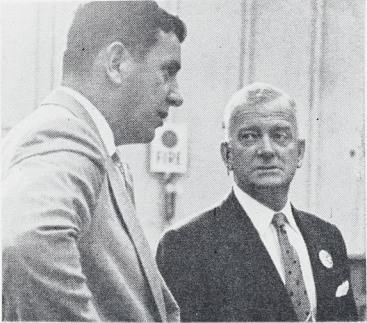
**THE COVER PHOTOGRAPH** of this issue was taken during the week of the T-38 rollout when both the new T-38 and the N-156F counterair fighter mockup were placed on display for the first time. In that photo are shown the same party of officers of the Royal Danish Air Force as seen posing below. Lt. General Tage Anderson, commander, Royal Danish Air Force, headed the party, and is seen below immediately to the right of President Collins, center. From right to left: Lt. Colonel Van Holm, Lt. Colonel Wylich Muzoll, Major Svend Thorkildsen, Lt. Colonel Eric Vonholck, then the General. After Mr. Collins are Colonels Jerry D. Page and Lawrence R. Lyman of USAF Air Training Command; Col. Jack T. Bradley, USAF escort.



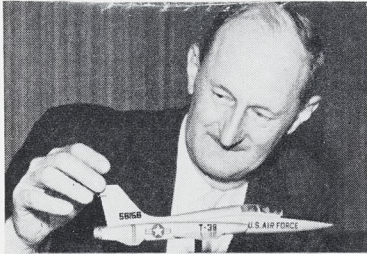
## Denmark



## Australia



**AIR MARSHALL** Sir Frederick Scherger, chief of Air Staff, Royal Australian Air Force, at right, discusses N-156F with Welko Gasich, director of Weapon Systems Development Engineering at Northrop during a briefing. Others with the Air Marshall are shown in the photograph at right.



**WING COMMANDER** George de LaRue of the Royal Australian Air Force was another visitor from the land "down under."



**ABOVE**, from left, are Group Captain Peter Parker, air attache, the Australian Embassy, Washington; C. R. Gates of Northrop; John L. Knott, secretary for Production, Australian Department of Defense; Group Captain Geoffrey Marshall, engineering officer; A. E. Olson, Northrop Customer Relations; the next man is unidentified; then Ian Fleming, chief designer for Government Aircraft Factories.

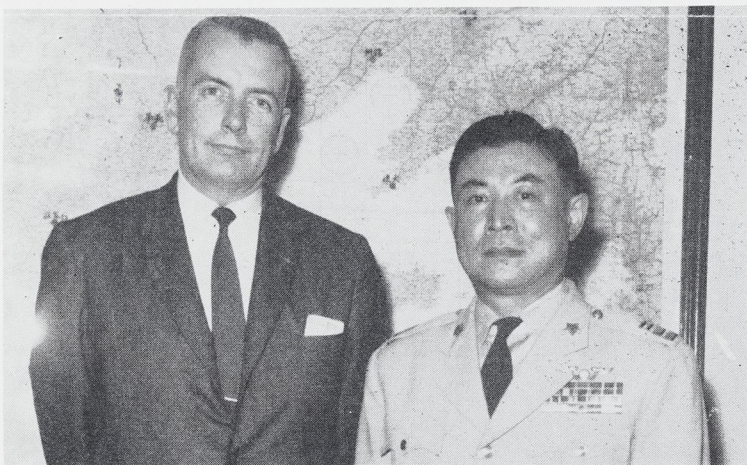
## Union of South Africa



**COMMANDANT** Geoffrey C. Krummeck, air attache of the Union of South African Embassy, accompanied by Major T. Cockbain of the South African Air Force, from left above, have represented that area of world in conferences on the N-156F counterair fighter at Northrop. Right foreground is Mr. Nettleton who hosted the visitors.



**TRYING THE COCKPIT**, Commandant Krummeck and party hear the explanations from Ray Gardner, right, project engineer for Northrop on the N-156F program. The party was escorted by officers from Headquarters, U. S. Air Force, Lt. Colonel M. C. Paul and Major F. W. Mueller. Roominess, good visibility are features of N-156F cockpit.



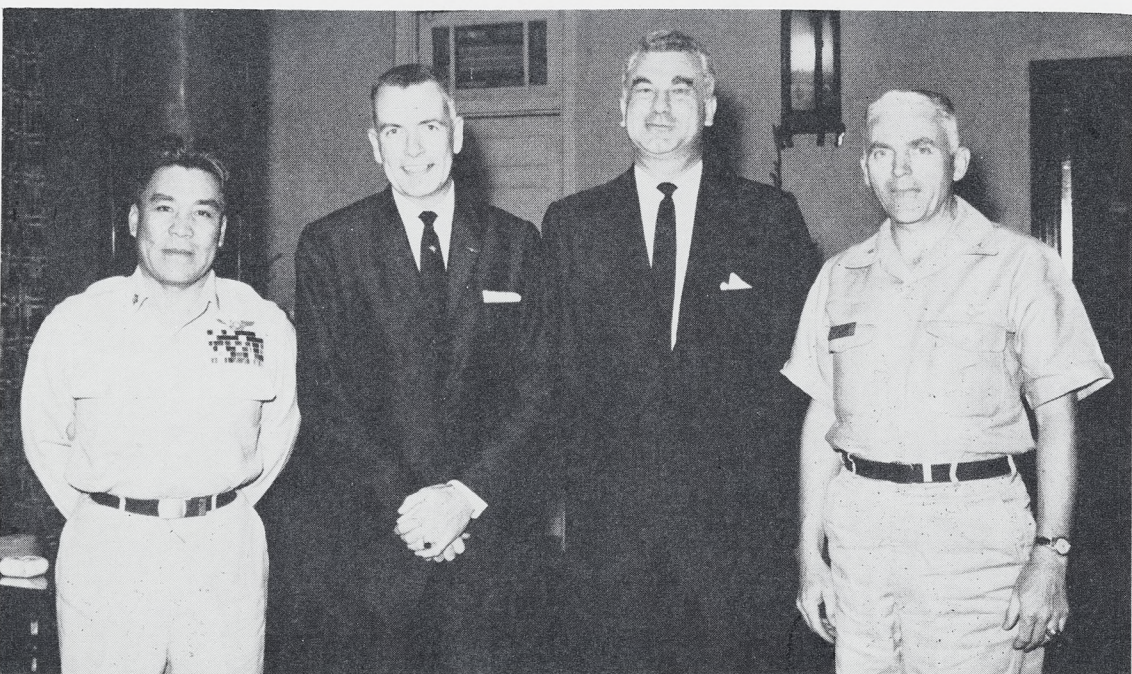
**LT. GENERAL CHEN CHIA-SHANG**, commander in chief of the National Chinese Air Force, poses with J. Gilbert Nettleton, jr., corporate vice president and general manager, Northrop International. The N-156F presentation, in this case, was held on Formosa in General Shu-ming's (see below) and General Chia-shang's stronghold. Exchange between representatives typifies numerous such meetings wherein Northrop officers and technicians have received the gracious hospitality of U.S. allies abroad.

## Canada

**FROM THE NORTH** came Squadron Leader Robert Middlemiss from the Office of Requirements, Royal Canadian Air Force, seen in T-38 front cockpit at right, and Wing Commander Don Laubman, RCAF Liaison at the Pentagon, far right. Air Commodore Robert A. Cameron, air attache at Canadian Embassy in Washington, visited Northrop earlier.



## China



**GENERAL WANG SHU-MING**, chief of General Staff, National Chinese Air Force, at left, with, from left, Mr. Nettleton; Hugh Grundy, vice president, C.A.T.; and Maj. General Fred Dean, chief, USAF Section, MAAG-Taiwan.



**1954 . . .** Northrop Aircraft, Inc. team of management and technical men tour Europe, and subsequently Asia, to examine defense needs of free allied nations. They confer with leading military representatives of many countries; find widespread concern about increasing complexity, expense of high performance fighter aircraft. Northrop begins a re-evaluation of existing and upcoming aircraft technology with view of finding less expensive defense solutions.

**Summer, 1955 . . .** Northrop management and engineering studies recognize tremendous service potential for lightweight, high thrust-to-weight ratio family of airplanes if such airplanes could be produced at low cost. This possibility becomes reality when significant breakthrough is achieved by Northrop engineers using state-of-the-art technology and the newly available General

## The Chronology: N-156F / T-38 Evolution

Electric J-85 jet engines in twin design. Initial concept is to apply the new design philosophy to a fighter configuration (N-156F).

**January, 1956 . . .** United States Air Force indicates interest in trainer aircraft with N-156F qualities.

**March, 1956 . . .** First proposal for T-38 trainer aircraft is submitted to Air Force.

**May, 1956 . . .** Northrop assigns company's top talent to lightweight family projects. T-38 Trainer Project Office established. Instructions are: design and develop airplanes in shortest time period with minimum change from prototype to production aircraft. This unique concept meant close coordination of Engineering and Manufacturing. Design and development of N-156F counterair fighter proceeds in parallel.

**June, 1956 . . .** First wind tunnel tests. Since then 14 models have undergone over 3100 hours of testing for the trainer configuration alone. Aerodynamic similarity of fighter and trainer configurations make substantial body of T-38 technical data directly applicable to N-156F. Differences that do exist to enable higher performance of fighter are being proved in further wind-tunnel program.

**June 19, 1956 . . .** Decision to employ Honeycomb bonding.

**June 25, 1956 . . .** Decision to use two identical, independent power generating systems. Loss of a system or even an engine will not hinder flight operation.

**July 14, 1956 . . .** Advanced Design firms up T-38 configuration. Model specification is submitted to Air Force.

**August 15, 1956 . . .** Air Force DEI on the full-scale T-38 mock-up containing all systems.

**September 5, 1956 . . .** Cockpit Standardization Board meets with key AF personnel from ARDC, AMC, FTC and ATC.

**October 16, 1956 . . .** Formal T-38 mock-up board. Air Force says go ahead with design.

**December 1, 1956 . . .** Tool design and manufacturing begin for T-38.

**May 15, 1957 . . .** Leading edge flap designed to provide N-156F with high lift for short field take-off.

**July 3, 1957 . . .** Capability of zero-launch is confirmed for N-156F.

**July 11, 1957 . . .** Basic nose configuration is firmed up for N-156F including avionic system for adaptation to NATO, SEATO and other allied nations' requirements.

**October 22, 1957 . . .** Leading edge extensions are added to wing roots of N-156F to increase speed.

**December 4, 1957 . . .** Northrop's Chief Test Pilot Lew Nelson flies variability airplane specially equipped to simulate predicted flight characteristics of T-38. Airplane performs as predicted. Data is good for N-156F.

**December 18, 1957 . . .** Air Force assigns T-38 Project Officer. T-38 assumes full organizational status along with Snark.

**January 17, 1958 . . .** Design is complete on T-38. Engineering effort concentrated on maintenance and design testing phases of development.

**February 25, 1958 . . .** Northrop management authorizes completion of N-156F configuration.

**February 28, 1958 . . .** First testing of ground-level ejection system on supersonic track at Edwards Air Force Base.

**April 15, 1958 . . .** Tool design and manufacturing work is completed for prototype T-38.

**May 12, 1958 . . .** Analog and digital computers establish total flight characteristics.

**May 12, 1958 . . .** Northrop meets with Air Force to prepare official development plan for N-156F.

**May 27, 1958 . . .** N-156F assumes full project status at Northrop.

**June 19, 1958 . . .** First wind tunnel tests specifically for N-156F verify high speed performance characteristics.

**June 19, 1958 . . .** Low speed wind tunnel tests on N-156F model with leading edge flap confirm estimates on short field takeoff and landing characteristics.

**July 8, 1958 . . .** Cockpit lighting inspection for T-38.

**August 15, 1958 . . .** T-38 rollout, four days ahead of schedule, is witnessed by high military officials.

**August 16, 1958 . . .** President Collins states that although official Air Force date for first flight of T-38 is January, 1959, Northrop hopes to fly late in 1958.

**August 24, 1958 . . .** First major N-156F fuselage sections assembled. Manufacturing work has begun on more than 50 per cent of the airplane. Development of N-156F proceeds based on target date for first flight in mid-1959.

# The Lightweight Concept Explained

POWERPLANT BREAKTHROUGH, USE OF ADVANCED TECHNOLOGY  
COMBINED BY NORTHROP IN BOLD NEW STEP

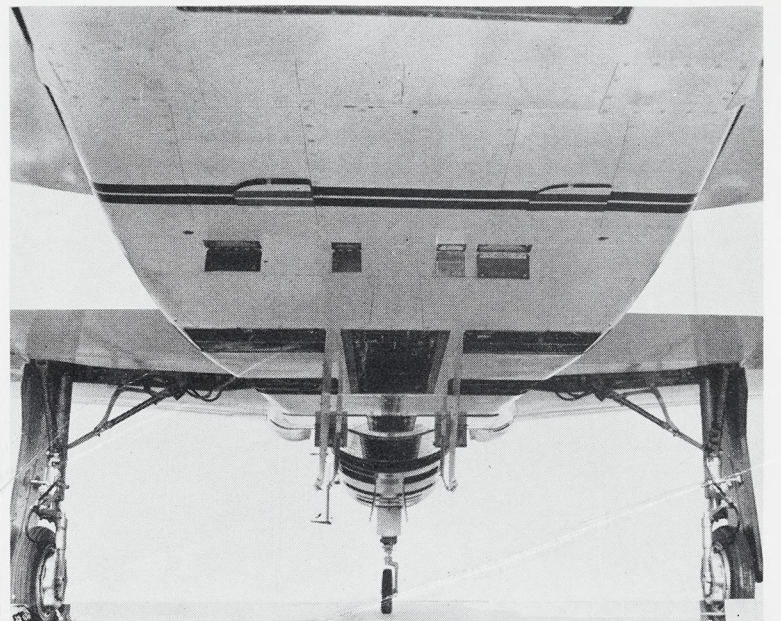
(The following is a digest of a detailed technical report by Mr. Gasich. Copies of the complete report may be obtained by writing Northrop International.)

The need for continual improvement in performance has resulted in a pervading tendency in the development of new weapon systems to produce corresponding increases in weapon system size and complexity. The attendant effects have been higher initial development and procurement costs, higher operating costs, reduced

**EASY ACCESS**—means simple low-cost maintenance.

reliability and operability, and increased maintenance.

This trend of ever-increasing size and complexity to meet performance requirements has become so prevalent that the ability to procure sufficient numbers and to operate effectively many of the more advanced aerial systems is a matter of utmost concern to both budgetary and military planners alike. The achievement of less



ago Northrop was made aware of the development of the J83/J85 engine series for missile applications. It was immediately realized that utilization of the small, high thrust engines in manned aircraft would result in significant reductions in airplane size and weight

objective of economy in high performance aircraft, then, Northrop established the following design criteria:

1. Simplicity
2. Maintainability
3. Producibility
4. Safety
5. Light weight

It was the purpose of these design criteria to formulate specific requirements which would control the overall design philosophy. The basic requirement conformed with the corporate objective of maximum weapon systems performance at the lowest possible cost—security with solvency.

By **WELKO E. GASICH**  
Director, Weapon Systems  
Development Engineering

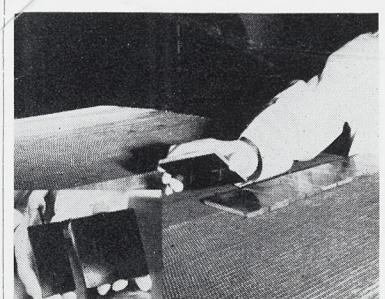
in satisfying a specific military requirement.

Since decreases in size and weight are fundamental to reductions in procurement and operating costs, and are major contributions to easier maintenance and improved operational readiness, studies were begun in which we considered these missile engines as modified for application to manned aircraft.

This in turn led to the development by Northrop of its new N-156 family of aircraft, which today includes both the N-156F counterair fighter and T-38 trainer versions.

The coupling of existing and anticipated technology with operational requirements was made after extensive discussions with appropriate military representatives in the United States and abroad.

To achieve the N-156F/T-38

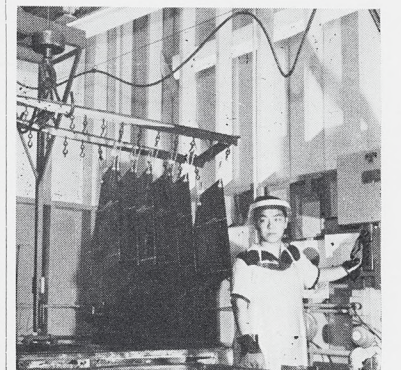


**HONEYCOMB BONDING**, permitting high strength in lightweight structures, was basic advance on N-156F/T-38, allowed full exploitation of major weight saving obtained by high thrust-to-weight ratio engines.

costly, less complex solutions to defense problems, therefore, is the challenge which confronts the aircraft industry today.

A prime example of the industry's progress in meeting this challenge is the development and exploitation of the new high thrust-to-weight ratio turbojet engines.

About three and one-half years



**CHEMICAL MILLING**—Further advantages were obtained from use of chemical milling processes to remove excess material in areas not adaptable to machining methods after airplane parts are formed.



**T-38 SUPERSONIC TRAINER**, wherein function and grace are one. Internationally famous aviation writer Marvin Miles of Los Angeles Times describes T-38 as having "that supersonic look, even when standing still . . ." Note the twin canopies feature.



ON THIS PAGE ARE SHOWN MANY OF THE MEN OF NORTHROP AIRCRAFT, INC. WHO ARE RESPONSIBLE FOR THE COMPANY'S NEW FAMILY OF HIGH PERFORMANCE MILITARY AIRCRAFT



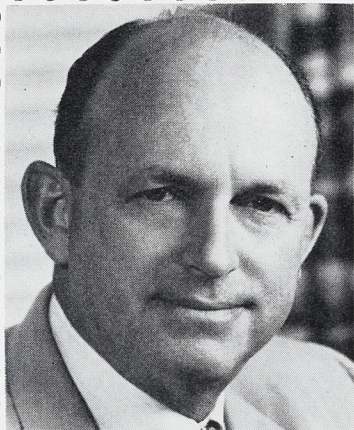
**WHITLEY C. COLLINS**  
President  
Northrop Aircraft, Inc.

Mr. Collins, as chief executive officer of Northrop, heads a vast establishment of talent, facilities and resources which in total today ranks 150th in size among all U. S. companies.

He authored the philosophy of "security with solvency." The N-156F counterair fighter and T-38 trainer designs are direct results of that philosophy.

As a result of his long personal interest in mutual defense, Mr. Collins has committed Northrop to a partnership in depth with U.S. allies abroad.

Mr. Collins has been associated with aircraft for 30 years; became Northrop president in 1954.



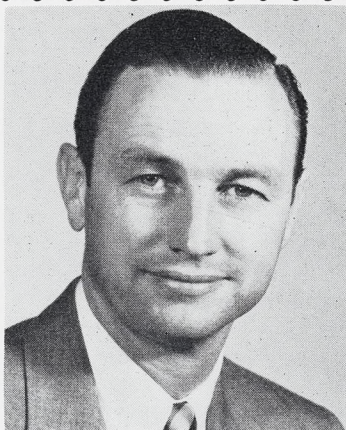
**ROBERT R. MILLER**  
Senior Vice President  
Northrop Aircraft, Inc.

Mr. Miller and Mr. Jones, as senior vice-presidents of the company, work closely with Mr. Collins in the executive management of Northrop.

Together, Mr. Miller and Mr. Jones exercise broad authority over all administrative and operational aspects of the corporation.

Mr. Miller has many years of financial, legal and general management experience in the U. S. aircraft industry. He most recently headed Northrop Aircraft's largest division.

Mr. Jones is nationally recognized for his ability in the fields of technical management and long-range government and corporate planning.



**THOMAS V. JONES**  
Senior Vice President  
Northrop Aircraft, Inc.



**IRVING ROTH**  
Vice President/Asst. to Pres.  
Northrop Aircraft, Inc.

Mr. Roth brings to bear great experience and authority in the aircraft industry, particularly with regard to fiscal matters.

He has held several key Pentagon positions relative to mutual defense, both in Europe and Asia. He represented the Defense Department in reconstituting the Japanese aircraft industry; negotiated the bilateral agreement to build jet military aircraft in Japan.



**RICHARD R. NOLAN**  
Vice President/Gen. Manager  
Northrop Division

Mr. Nolan, as head of the largest Northrop operating division and the organization which is directly responsible for the development and manufacture of the N-156F, T-38, Snark intercontinental guided missile and many other major Northrop programs, exercises great personal influence on the progress of these weapon systems.

He has been in aircraft continuously for 30 years.

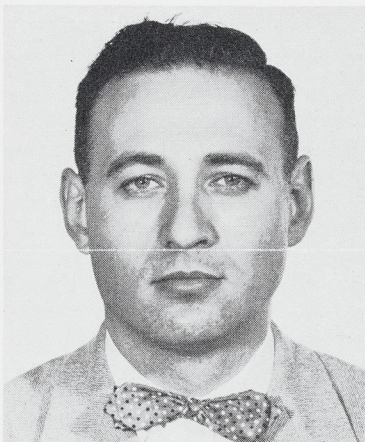
## These Northrop Leaders Speed N-156 Programs



**GEORGE F. DOUGLAS**  
Vice President, Engineering  
Northrop Division

The problem of applying advanced technology to achieve simplified defense solutions is first and foremost an engineering matter. At Mr. Douglas' disposal is one of the finest and most modern scientific and engineering complexes in the United States.

Mr. Douglas and his organization carry much of the burden of making "security with solvency," as reflected in Northrop's newest aircraft designs, possible.



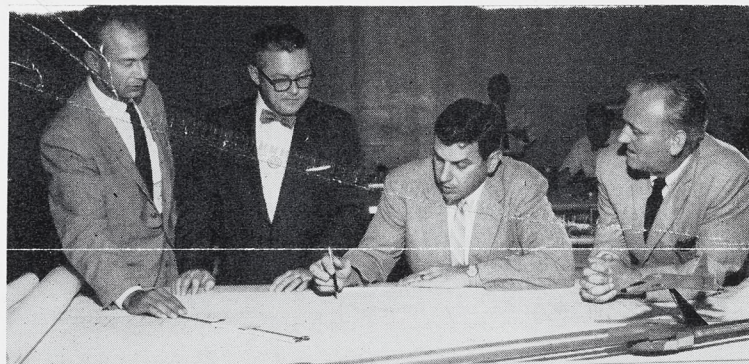
**C. ROBERT GATES**  
Corporate Development Planner  
Northrop Aircraft, Inc.

As a corporate development planner, Mr. Gates has been one of several men concerned with worldwide military and economic studies which resulted in the concept of Northrop Aircraft's N-156 family of high performance, lightweight, lower cost military aircraft systems.

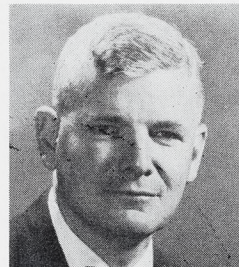


**MICHAEL CREAMER**  
Director, Mfg. Prog. Planning  
Northrop Division

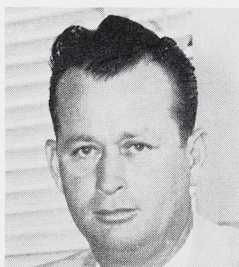
Mr. Creamer is an expert in manufacturing technology. He has made extensive studies throughout Europe and Asia in connection with the evolving N-156F counterair fighter program, with a view to determining requirements for manufacture of this system outside U.S.



**DESIGN NUCLEUS**—Photo shows four Northrop engineers who have been personally very active on N-156F program. Welko Gasich, director of Weapon Systems Development Engineering, sitting. From left: Art Ogness, general supervisor, Weapon System Design; W. G. Stuart, Advanced Design; and Rudy Kosin, research engineer. Mr. Gasich is the author of a technical paper on the N-156 family of airplanes, a brief digest of which appears on page seven, this issue. Northrop's engineering facilities are among most modern in U.S. aircraft industry.

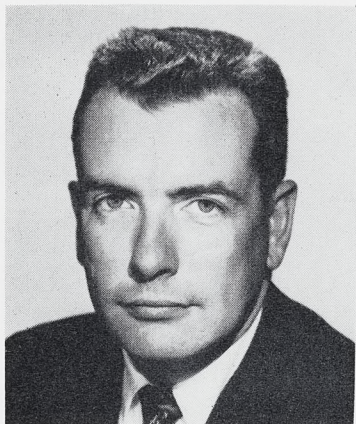


**MANNED AIRCRAFT TEAM**—Above, center, is Morwick Ross, project manager for all manned weapon systems at Northrop. Left is Ray Gardner, project engineer for the N-156F counterair fighter. At right is Stan Erbeck, T-38 trainer project engineer. Both programs are on schedule. First flight of first member of new N-156 family of aircraft to emerge—the T-38—is expected late this year. It will fly at the AF Flight Test Center, Edwards AF Base.

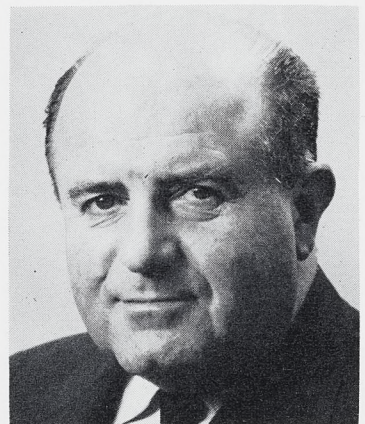


**MANUFACTURING KEY MEN**—Above, center, is F. W. "Bob" Lloyd, vice president, Manufacturing, Northrop Division. Mr. Lloyd heads a large manufacturing organization. At left is Thomas McCracken, long-range manufacturing planning expert with extensive experience in field. Rex Thornhill, right, is project superintendent on N-156F/T-38 advanced production—progressing rapidly.

## Northrop International



**J. GILBERT NETTLETON, JR.**  
Vice President/Gen. Manager



**GEOFFREY PARSONS, JR.**  
Vice President, Europe



**GWYNN H. ROBINSON**  
Asst. to V-P/Gen. Manager

Northrop Aircraft, Inc., feels that to be of greatest possible value to the free allied nations, it is necessary for the company to establish a technological and economic partnership in depth with these nations and their military organizations.

A natural outgrowth of this approach has been the formation of Northrop International as the arm of the company responsible for managing Northrop's activities outside the United States.

Mr. Nettleton, who heads Northrop International, is familiar in detail with the defense requirements of NATO, SEATO and other nations of the allied free world.

Mr. Parsons, representing Northrop International in Europe, has resided there since 1941. He was formerly with NATO. Mr. Robinson is a specialist in international business management.





**FIFTEEN-YEAR FOLK**—Thirty-nine Norcrafters who have been with the Company since the early days of World War II met in the NRC clubhouse with Richard R. Nolan, vice-president and general manager. A long-timer himself, Mr. Nolan informally spoke to the group of their mutual past and ever-brightening future. See Page 2.

## NORTHROP

# NEWS BRIEFS

**OPERATIONAL SNARK**—On August 30 missilemen of SAC and ARDC, conducting an unassisted launch of the Snark, demonstrated a little-known but potent capability of the missile—to reverse its course and to return to its base during flight. Advantages of this capability, which is not possessed by ICBM's, were discussed by Aviation Editor Marvin Miles in the Los Angeles Times, September 7.

**PACE MEASUREMENT**—Northrop team which journeyed to Wright-Patterson AFB for PACE presentation consisted of Richard R. Nolan, vice-president and general manager of the Northrop Division; F. W. Lloyd, vice-president, Manufacturing; John R. Alison, vice-president, Customer Relations; and D. N. Petersen, chief, Methods Engineering. Highest Air Materiel Command echelon attended the briefings, including General E. W. Rawlings, commander, AMC; Major General Wm. O. Senter, director of Procurement and Production; Major General W. T. Hudnell, commander, Air Materiel Force, Pacific area; Lt. General W. F. McKee, vice-commander, AMC; Brigadier General W. A. Davis, deputy director, Weapon Systems; and Brigadier General B. H. Warren, deputy director, Procurement and Production. Interest in presentation and favorable comments which resulted were further reflection of complimentary reception of Northrop management's Pace program by military and administrative agencies. Official comments have praised imaginative thinking of Northrop management in devising effective cost reduction tool.

**T-38 ENGINE DELIVERY**—Arrival at Hawthorne last week of the first J-85 engine for the T-38 trainer, plus other advances recently made in the J-85 program by General Electric, prompted the following telegram from George F. Douglas, vice-president, Engineering, to Guy C. Shafer, general manager, Small Aircraft Engine Department, General Electric Co.: "Please accept my congratulations to you and your organization for meeting all of your August milestones. This fine performance on the part of General Electric provides additional assurance of an early flight date that we are all working hard to achieve."

**PRESQUE ISLE**—Gaylord Anderson, general supervisor of field operations at Presque Isle Snark base, reports from his trip to Maine that site construction work is on-schedule, steady and highly satisfactory. Weather is important factor in construction schedule. Heavy work must aim for summer completion since winter limits outdoor operations.

**NEW WEAPONS SYSTEM**—Northrop will submit a proposal to North American Aviation October 27 for engineering and management services leading to design, development, testing, manufacture and system support for a ground support subsystem for the B-70 chemical bomber. "This proposal appears to be ideally suited for both the manufacturing and engineering capabilities of the Northrop Division," said Richard R. Nolan, vice-president and general manager. "We will be able to utilize to good advantage our new Engineering and Environmental Test facilities."

**TEST EQUIPMENT**—Northrop's newly developed electrohydraulic shaker for vibration testing of ground support equipment is now available for prime and subcontract work, it was announced by George Douglas, vice-president, Engineering. Its force output of 96,000 pounds, five times greater than the largest electrodynamic shaker, represents a major technical breakthrough for Northrop engineers, who succeeded in paralleling four cylinders for this accomplishment.

**N-156F VISITS**—Military parties from the Royal Hellenic Air Force and the Royal Danish Air Force visited Northrop recently to hear capability briefings on the N-156F and to study this NATO counterair fighter. Party from Greece was headed by Maj. General Constantinos Geranopoulos, vice-chief of staff, General Air Staff. Danish group was headed by Lt. General Tage Andersen, commander, Royal Danish Air Force . . . Briefings were given by Northrop International Vice-president and General Manager Gil Nettleton, and Assistant to the Vice-president Gwynn Robinson. Both groups were hosted at lunch by Mr. Collins.

**HIGH COMPLIMENT**—Kenneth R. Bragg, Engineering, and member of the SAE A-16 Fuel System Committee, has been highly complimented by Brigadier General Victor R. Haugen, assistant deputy commander for Weapon Systems . . . The assignment was to help resolve repeated failures of flexible fuel line couplings in Air Force aircraft. Wrote General Haugen to Mr. Collins: "Mr. Bragg's professional ability was of great service to the Air Force-Industry team on this problem. He is to be commended . . . I wish to express my appreciation, in addition to that of the Air Force, for Northrop's contribution and the quality of personnel you detailed to assist us in this team effort."

**STEWARDESSES PREVIEW JET AGE**—United Air Lines hostesses Gail Bronson, Carolyn Sjoström inspect innards of Boeing 707 aft section. Bob Bagby, project coordinator, Program Planning, describes the up-to-date techniques used on the Boeing line. Gail and Carolyn are excited about prospects as jet stewardesses and had wanted to learn more about this type of airplane. John Hall, contract administrator, arranged the Boeing line tour.

# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif. Wednesday, September 10, 1958

## Northrop Support Strong At SAE Aero Meeting

Northrop has lent top level and top talent participation to the Society of Automotive Engineers for its national Aeronautic Meeting and Aircraft Production Forum scheduled September 29 to October 4 at the Ambassador Hotel, Los Angeles.

George F. Douglas, vice-president, Engineering, is on the advisory committee, and Wm. F. Ballhaus, vice-president and general manager, Nortronics Division, is on the planning committee for the Aeronautic Meeting.

Robert R. Miller, senior vice-president, will be official toastmaster at the Tuesday Cocoonut Grove luncheon.

In addition, a full staff of Northrop experts in all fields of aeronautical engineering and manufacturing, from exotic materials and processes to escape systems for supersonic aircraft, will serve prominently as panel leaders and members.

John A. Van Hamersveld, general supervisor, Design Support,

## AID Financial Report Shows Donations Up

The AID-United Givers financial report for the 12 months ended July 31 shows a substantial increase in contributions over both the previous 12-month period and the figure estimated, according to Mal Mountain, AID chapter chairman.

The cumulative fiscal 1957-1958 total was \$300,735.11, well above the \$262,922.79 donated in the year ended July 31, 1957. This figure exceeded estimated contributions by \$37,139.80.

For the Hawthorne payroll, which includes Nortronics Plant Two, Corporate offices, and all Northrop Division facilities with the exception of Florida, actual receipts bettered the estimate by 11.6 per cent.

As Nor-AID administrator, Mr. Mountain pointed out that disbursements had also expanded. In contrast to the 234 cases assisted in the previous fiscal year, 300 received grants. The \$64,006.12 expended represents an increase of 54.2 per cent over fiscal 1956-1957 disbursements.

## "A TOWER" TO APPEAR IN AF NEWSPAPERS

The Northrop News—Aireporter serial, "A Tower in the Plain," has been syndicated to appear in eighty-two Air Force base newspapers.

Fifty-two Strategic Air Command newspapers and twenty-seven Air Training Command newspapers will carry the story.

The Snark's SAC series has been condensed to appear as five articles. Syndication arrangements were made by Alvin Smith, Public Relations.

is executive member of the Manufacturing Forum.

Norcrafters participating in the forum are A. P. Binsacca, J. Hagins, H. J. Swartz, J. W. Hinchliffe, R. E. Horwatt, J. E. Crawford, P. T. Nelson, W. E. Cox, K. R. McCready, Ernie Salen, W. F. Wagner, John Hendel, N. A. Neibel, and Barney Gaiennie.

Participating in the Aeronautic Meeting will be W. W. Harter, H. E. Michael, C. E. Carroll, and D. M. Root.

## Louvain Convention To Hear Wells Discuss Human Engineering Role

The World Congress of Aviation Medicine has invited Northrop Dr. J. Gordon Wells to address a session on Space and Upper Atmosphere Medicine when the learned society convenes September 23-27 in Louvain, Belgium.

Dr. Wells will present a paper on "Human Engineering Concepts in Current Weapon Systems Design". He will point out how human engineering is becoming increasingly essential as man begins his travel at speeds beyond sound and to distances beyond imagination.

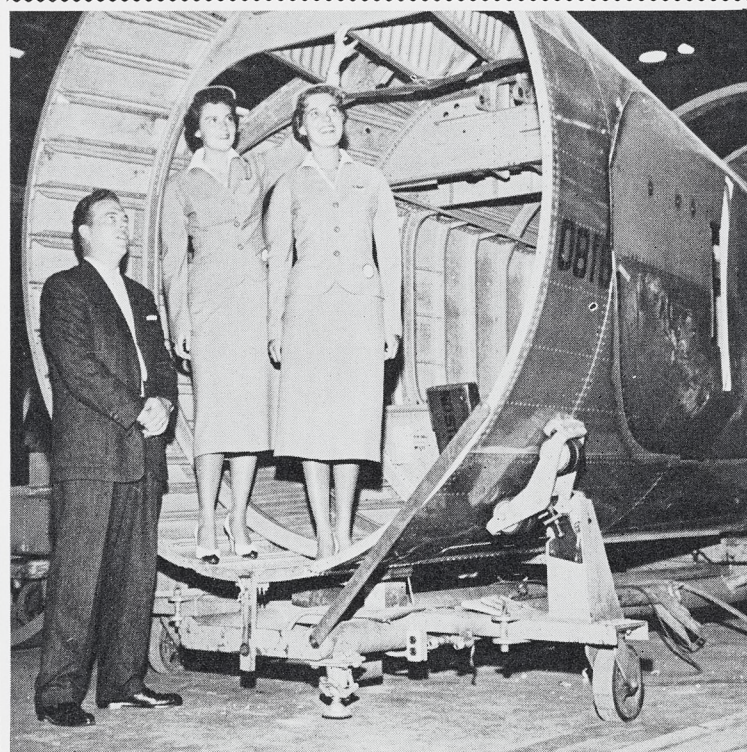
"It is essential that we design for the man, rather than trying to incorporate him into the weapon system after it has been de-

signed," says Dr. Wells.

It is not enough to get the man up there. He must be able to breathe and withstand heat, radiation, acceleration, toxicants and pressures. Allowance must be made for food and fluid intake, for elimination of wastes. He must be able to operate the controls and monitor the instruments. Provisions must be made for emergencies.

Dr. Wells, who is supervisor of Human Engineering Analysis, received his PhD in Aviation Physiology from USC.

His work at Northrop is on the T-38 trainer and the N-156F counterair fighter, as well as on extra-atmospheric advanced weapon systems.





## People Who Impress

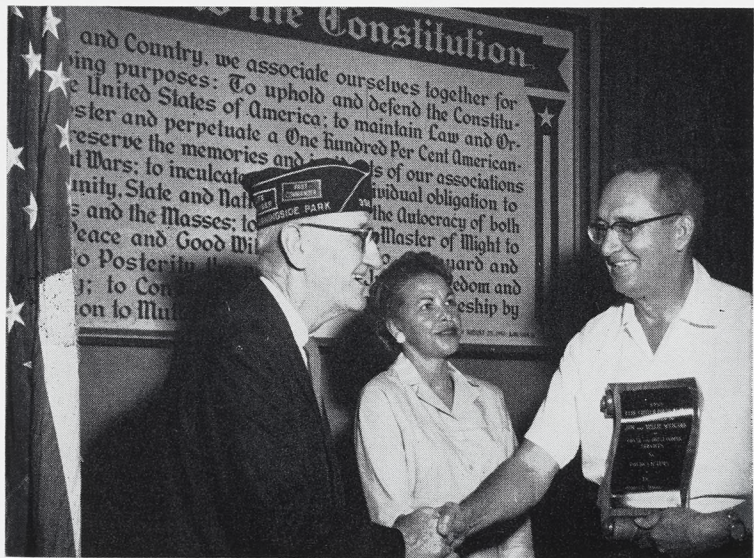
Every Friday night Norcrafter James Weigand drives out to Rancho Los Amigos Polio Hospital because Friday night is movie night for these patients, most of whom are completely paralyzed.

And sometimes he drives out Saturday if he can arrange a special program for the kids. And sometimes he drives out Sunday with salad and goodies for a barbecue.

In the last four years James and his wife Nellie have logged up more than 900 hours of volunteer service.

Recently James L. Hughes, state chairman of the American Legion Blue Crutch Polio Committee, presented the Weigands with a trophy for loyal and outstanding service to polio victims, although James Weigand himself is not a Legionnaire.

"It is an exception that someone outside the Legion should be recognized for community service under the Legion's auspices," said Mr. Hughes, "but the Weigands are exceptional people."



FOR SERVICE to polio victims, James Weigand and wife Nellie receive award from Legionnaire James L. Hughes.

## Crenshaw Traffic To Be Slowed by Construction

Traffic on Crenshaw Boulevard between 131st and 132nd Streets will be curtailed for the next six months during construction work on the Dominguez drainage channel.

Traffic on Crenshaw at this area will be maintained by a three-lane detour road adjacent to the improvement site after construction work begins next week.

The flow of traffic will be regulated for peak-hour volumes to conform to the following pattern:

Throughout the night and during the greater part of the day, two lanes will be provided for northbound traffic and one lane for southbound. During the after-

noon hours of heaviest southbound traffic, the reverse will be true: vehicles traveling south will be provided with two lanes.

Norcrafter are advised to use alternate routes whenever possible to avoid congestion in the construction area.

## Richardson to Present Crews Paper on Security Education

Frank Richardson, assistant director, Security and Protection Services, is slated to present a paper September 17 in Washington, D.C.

The paper, entitled "The

## Bill Wisniewski Again Competes In Navy's NMAC

Ace model airplane "hot rod" Bill Wisniewski, T-38 Planing, has again, on invitation, competed in the National Model Airplane Championships.

Hosted annually by the Navy, this year's competitions buzzed over the Glenview, Illinois, Naval Air Base. Bill was flown to Glenview, together with NMAC officials, in a Navy R5D.

In the meet, Bill, to quote him, "didn't do too well this year": he placed third in the Class A Open Speed event and fourth in the Class B Open Speed.

In 1959, when the site of the Championships moves to Los Alamitos, he will increase his wingspread by moving to official status—event director for open speed competition.

Bill has also been honored by selection to the American team slated as a contender in the world championship tourney on Czechoslovakian courses.

## Two on UC Extension Staff are Norcrafters—Experts in Fields

Two Norcrafters will instruct University of California Extension evening engineering courses during the fall semester.

Course taught by Arnold A. Jensen, Aerodynamics supervisor, is Engineering Aerodynamics and meets Mondays, beginning September 22, at Westwood.

Lee B. Johnson, chief safety engineer, will teach Fundamentals of Industrial Safety at the downtown Los Angeles facility on Wednesdays. Mr. Johnson's lectures start September 17.

These two courses are part of UC Extension's expanded program of 400-plus evening classes in engineering and mathematics.

## Richardson to Present Crews Paper on Security Education

Northrop Security Education Program," was written by Paul Crews, Security and Protection Services director. The occasion of presentation is the Fourth Annual Convention and Seminar of the American Society for Industrial Security at the capitol city's Shoreham Hotel.

Included in the topics to be covered by Richardson are security training for all personnel levels, on-the-job instruction, and security advertising.

**LONG SERVICE TOGETHER**—Richard R. Nolan, one of the fifty original Norcrafters when the Company was formed in 1939, sits with friends who have just received their 15-year pins. They have shared memorable hours together during the phenomenal growth of Northrop. Picture represents more than seven and one-half million hours of service. Occasion recalled happy times.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Items advertised in "For Sale" and "For Sale or Trade" categories are limited to a maximum of \$50. Price must be stated.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish

calls. Replies to box numbers are to be in writing. Box number replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

### FOR SALE

TEXTBOOK, Spanish Book One; Friedman, Arjona & Carvajal; \$1.50. Box 2505. A

BED, queen-size, innerspring mattress, box spring, frame, \$45. FR 9-9616. A

DRAPES, bamboo, w/adjustable traverse rods, \$15. FR 9-2659. A

BED, double-size, \$25. DA 4-4750. A

DOG, toy fox terrier, \$35. DA 4-2709. A

BICYCLE, girl's 24", \$5. OR 7-4996. A

WASHER, Whirlpool automatic, \$50. HA 5-1030. A

GOLF CLUBS, Spaulding, 6 irons, bag, folding cart, \$40. FR 5-8778. A

ENCYCLOPEDIA, American International, 16-vol set, \$20. DA 9-3914. A

BABY CAR BED-SEAT, \$7. PL 5-7521. A

ARM CHAIR, modern, coral frieze, \$25. OS 5-2331. A

AUTO SPEAKER, Delco 6x9 hi-fi, 4-ohm, \$7. HO 4-7747. A

GOLF CLUBS, 10 irons, 4 woods, \$50. DA 9-1053. A

PRAAM, 8', glassed, w/2.5-hp outboard, \$50. FR 9-9306. A

FLOOR LAMP, 3-lite, \$10. OR 4-4032. A

CAR CHAINS, 6.70x15, \$8.50. Box 2503. A

PUPS, toy fox terrier, \$35. DA 9-3936. A

TRAILER HITCH, bolts to 1955 Chevrolet wagon frame. \$5. EX 5-0147. A

FURNITURE, davenport, coffee table, \$20. GA 3-1363. A

LENS, Wollensak Cine Raptor 38-mm telephoto-type, f:1.5, focusing for D-mount 8-mm movie camera, \$45. Box 2501. A

PLAYPEN, maple, w/pad, \$15. FR 2-3827. A

DINING ROOM SET, limed oak, 8-pc, \$50 TE 2-0578. A

CHILDREN'S CLOTHING, girl's sizes 4-6, teddy bear coat, dresses, skirts; boy's sizes 6-18 mo, suits, others; from 50c. Box 2504. A

BUICK, 1940 4-dr, \$40. FR 9-1592. A

### FOR SALE

DINING ROOM SET, walnut, table, 5 chairs, \$22.50. DA 6-4379. A

TODDLER EQUIPMENT, child's toilet seat, blue plastic, adjustable, hooks on adult commode, \$2.50. Box 2505. A

FREEZER, 15-cu ft chest-type, \$40. EX 8-4032. A

BICYCLE, English racing-type, 9-gear, new tires, \$45. FR 5-3894. A

RANGE, Norge gas, \$35. FR 9-2774. A

OSCILLOSCOPE, Heath 5", \$50. OS 6-1471. A

WASHER, Bendix automatic, bolt-down-type, \$25. FA 1-1027. A

BOW, lemonwood, 25-lb, \$4. OR 7-7834. A

KITTENS, silver Persian, 2-mo old, registered & pedigreed, \$25. UN 3-9315. A

LIVING ROOM SET, couch, chair, convert to beds, \$50. FR 8-5328. A

### WANTED TO BUY

DRAFTING EQUIPMENT, French curves, triangle. FR 9-9616. B

SEWING EQUIPMENT, Singer zipper foot, pinkina shears. PL 2-9597. A

STOVE, gas, apartment-size. FR 9-0363. A

### FOR TRADE

BICYCLE, Schwinn, girl's 26", w/basket, trade for English racing-type girl's bicycle. OR 7-7834. C

### FREE (to be given away)

KITTENS, white & multicolor, 2-mo old, long-hair. Box 2502. D

KITTENS, long-hair, OS 6-1696. D

### CHILD CARE OFFERED

BABYSITTING, day or night, South Bay area, older woman. FR 8-1375. G

### PERSONALS

RIDERS WANTED, New York area Sept. 20, return trip Oct. 13. FR 4-2674. L

## O.H. Minton Garner Commendation Letter for Speech to AF Reservists

Northrop received a letter of praise and appreciation for the speech recently made by Oscar H. Minton before the 9387th Air Reserve Squadron.

Mr. Minton, who has been project engineer for the development stages of the Snark almost since the missile's inception, was the first speaker in a summer series designed to acquaint reservists with the latest weapon system developments in the Strategic Air Command.

The letter of commendation for Mr. Minton and Northrop was signed by Lt. Colonel Frank J. Mahan, jr., commander, 9387th Air Reserve Squadron. It was addressed to John R. Alison,

vice-president, Customer Relations.

Mr. Minton familiarized the reservists with the Snark, America's first operational intercontinental missile, and detailed its contribution to SAC and American defense.

## NRC RIDERS REINED AT SHERIFF'S RODEO

Los Angeles' own version of the rip-snorting West, the 14th Annual Sheriff's Championship Rodeo, churned the Coliseum turf Sunday, August 31.

Among the high-steppers in the Grand Entry parade were the NRC Riding Club, whose participation has almost become a Sheriff's Rodeo fixture.

The rodeo is sponsored each year by the Sheriff's Relief Association of Los Angeles County. Funds are disbursed as sick and disability benefits.

# Northrop News

Vol. 16

Northrop Field, Hawthorne, Calif.

No. 25

A NORTHROP AIRCRAFT INC. PUBLICATION

Published every other Wednesday by  
PUBLIC RELATIONS  
NORTHROP DIVISION  
CHARLES BARR, Director

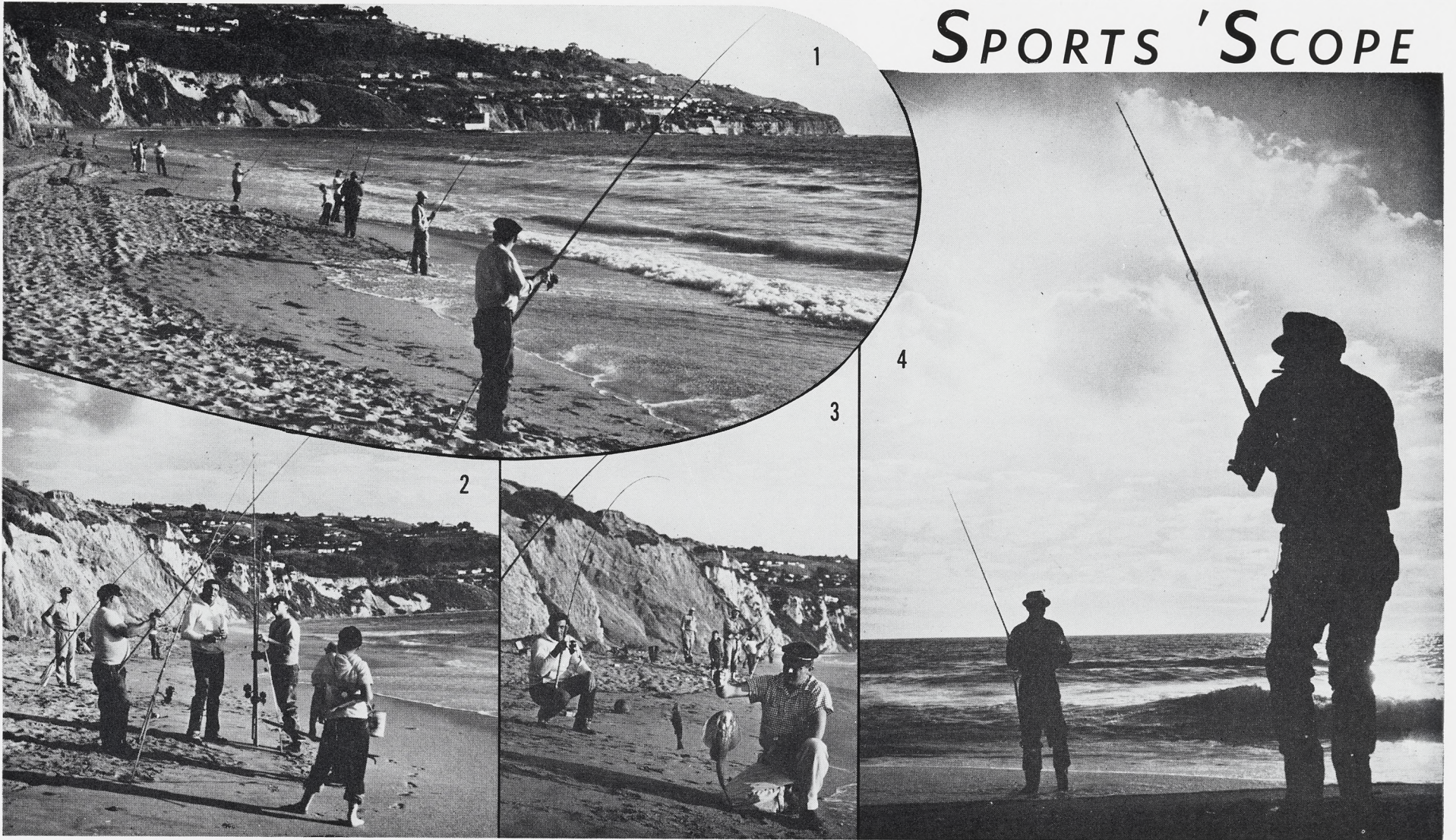
CHARLES BRADFORD, Editor

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News office phones—2456, 2457. Outside lines—OR 8-9111, OS 5-4611.





# SPORTS 'SCOPE



1) The afternoon is just one of the many spent by NRC surf fishers angling in the tide. In the foreground, Commissioner John Pawlicki scans the string of surfers. 2) Stan Nietupski, Ray Hawkes and Perry Cannon compare technique notes. Second-generation surfer Ray Hawkes, jr., right, listens attentively. 3) John Meehan stares down his just-landed banjo shark while Perry Cannon, left, displays his corvina. 4) John and L. A. Bednarchik, left, are still patiently awaiting the tugs that signal success.

## Magic Carpet Unrolls at New Location

The office-chair travelers of the NRC-sponsored Magic Carpet Group are convening for the next two months at the executive conference room on the fourth floor of the Engineering Center.

Tuesday meetings at 12:15 p.m. will continue to feature Norcrafter movies and color slides of general interest. The pace is varied with commercial 16-mm color-sound movies each third week.

An invitation to exhibitors and guests is extended by the director, Ralph Knowles, extension 2312.

## Rallye Diabolique Brewed In Sports Car Club Cuisine

Of ominous portent is the title borne by the NRC Sports Car Club function slated for September 21—Rallye Diabolique.

The plot thickens as the event is described as a time-and-distance rallye, with the option of running precision or seat-of-the-pants. (For the uninitiated, the latter choice requires but a stock odometer and a wristwatch with second hand.)

However imaginative the rallye name, the starting time is a prosaic 8:01 a.m. The navigator's first job will be to find Oscar's at Woodruff and Carson in Lakewood. Four hours later he should be in the Newport Beach area.

The \$2.50 entry fee, plus \$.50 per adult and \$.25 per child,

covers the undiabolical activities of water skiing, swimming, volleyball and softball on a private beach at rallye's end. A weenie bake is included. It's \$1.50 per car for those who are allergic to beaches.

## Black Bat Tournay Opens Tonight — Loser Awarded Mourning Stick

The Black Bat is once again with us.

This particular bat is not a winged mammal—it's the softball weapon-in-mourning awarded to the losing team in the annual NRC open tournament at season's end.

As announced by Ken Klier,

NRC softball day commissioner, the first lob of the 16-inch ball to be used in this competition is scheduled for tonight.

The Rosecrans Playground diamond will be the scene of sudden-death eliminations from 6 to 10 p.m. each evening until a tourney-winning nine has prevailed against all challengers.

Spoils of victory are individual medals. The sombre Louisville slugger goes to the team sustaining the final defeat. And that's one trophy that won't elicit much envy.

## Toastmasters 2583 Toss Party for First Birthday

Westchester's Buggy Whip Restaurant will be the site September 20 for the first birthday party of the youngest NRC Toastmasters Club, 2583.

New officers are slated to be installed that evening in conjunction with the anniversary festivities.

Guests are welcome and may contact President Walt Brown, extension 2773, for further information.



### RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 6)  
AVALON & VICTORIA, Gardena, D. B. COAD (5561-21666, ext. 1280). DA 3-6094. 2-6

(Zone 8)  
CRENSHAW & 182nd ST., Torrance, K. R. ROBERSON (5351-16058, ext. 2582). DA 9-9528. 2-8

(Zone 10)  
ARDMORE & GOULD, Manhattan Beach, JANE SHILLING (7440-27141, ext. 1240). FR 9-5114. 2-10

(Zone 12)  
INGLEWOOD AVE. & LENNOX BLVD., Inglewood. (Consider car pool.) D. A. OGILVIE (5234-15662, ext. 2521). OR 1-0162. 2-12

8:00 a.m. — 4:45 p.m.

(Zone 2)  
WESTERN & 92nd ST., Los Angeles, E. G. HENRICKSON (8820-32340, ext. 491). PL 4-7628. 5-2

(Zone 5)  
BROOKHURST & KATELLA, Anaheim, P. M. OLSON (1400-12003, ext. 665). OS 5-4220. 5-5

(Zone 8)  
WESTERN & 251st ST., Harbor City, R. L. WINNINGHAM (8821-49419, ext. 417). DA 5-0133. 5-8

(Zone 10)  
HAWTHORNE BLVD. & ROSECRANS, Hawthorne, JEANE NEGGIE (3620-56305, ext. 2570). OS 5-1881. 5-10

INGLEWOOD AVE. & MANHATTAN BEACH BLVD., Redondo Beach, SHIRLEY WILSON (3322-50105, ext. 2024). FR 2-4291. 5-10

AVIATION & PLANT, Redondo Beach, LUCILLE KAULUKUKUI (8890-53896, ext. 494). FR 6-0386. 5-10

### RIDES WANTED

8:00 a.m. — 4:45 p.m.

(Zone 13)  
MANNING & MOTOR, Los Angeles. (Consider car pool.) P. H. DOE (8831-56078, ext. 1458). VE 8-0454. 5-13

4:45 p.m. — 1:15 a.m.

(Zone 11)  
AVIATION & EL SEGUNDO BLVD., Hawthorne. BARBARA GARDNER (3144-49451, ext. 697). OS 9-3571. 8-11

### Miscellaneous — Split Shift

(Zone 4)  
FIRESTONE & IMPERIAL, Norwalk. (Hours: 7:15 a.m.—4 p.m.) RUTH PROPPER (6110-56294, ext. 661). 10-4

### RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 5)  
LA PALMA & VALLEY VIEW RD., Buena Park. (Via Rosecrans.) P. E. SHAFFER (5231-53082, ext. 1335). JA 7-8309. 12-5

(Zone 12)  
INGLEWOOD AVE. & LENNOX BLVD., Inglewood. (Consider car pool.) D. A. OGILVIE (5234-15662, ext. 2521). OR 1-0162. 12-12

8:00 a.m. — 4:45 p.m.

(Zone 13)  
MANNING & MOTOR, Los Angeles. (Consider car pool.) P. H. DOE (8831-56078, ext. 1458). VE 8-0454. 15-13

3:45 p.m. — 12:15 a.m.

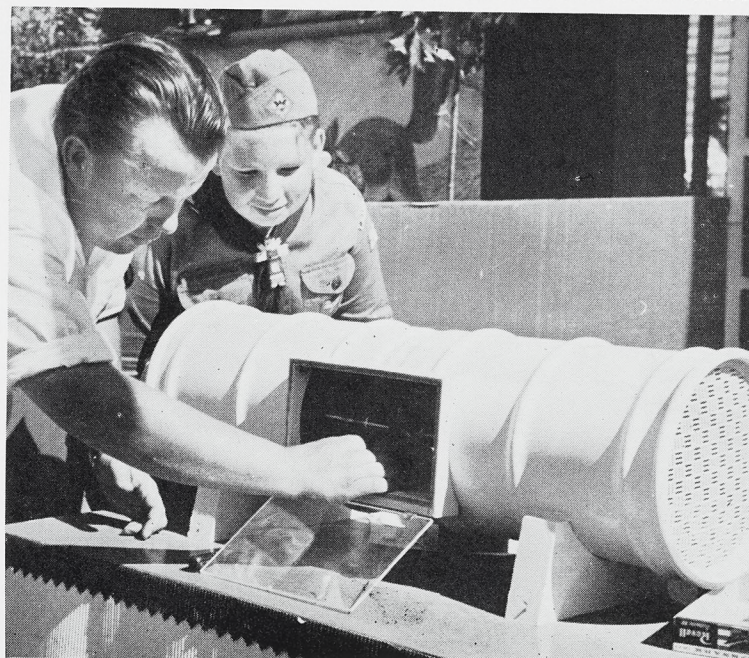
(Zone 5)  
DEL AMO & WOODRUFF, Lakewood, P. H. MAURER (5421-15210, ext. 1856). 16-5

SPRING & STUDEBAKER, Long Beach. (Via Del Amo.) K. N. ANDERSEN (5564-22097, ext. 2565). 16-5

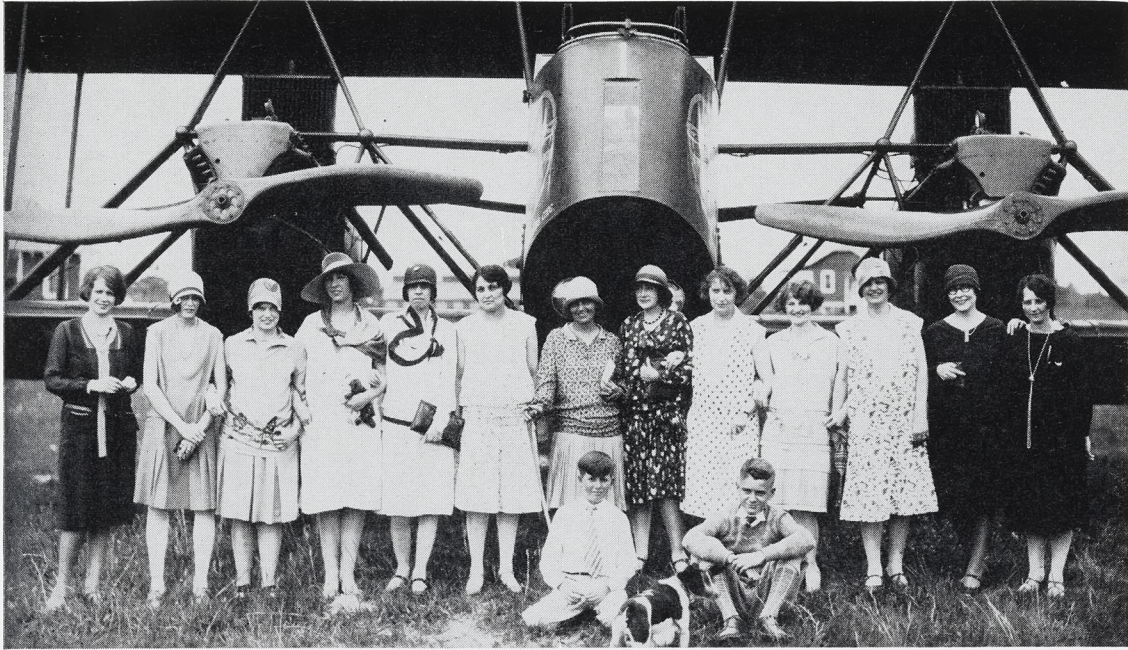
archers...

special NRC trophy  
for first deer  
shot by Archery  
Club active member

**MODEL TROOP**—While patrol-leader son Ralph supervises, Nortronics coordinator Paul White adjusts Snark model in miniature wind tunnel built by Boy Scout Troop 262 for recent Scout-O-Rama. According to Committee Chairman Paul, this Northrop-sponsored group of 22 boys is currently without a scoutmaster. Applicants may contact him at ext. 3-466.







## Thirty Years of Progress

Every so often you hear a man say, "What's good enough for my father is good enough for me." Modern women evidently take this sentiment to heart. The "new look" in feminine styling, the shockingly modern sack chemise, seems really to be only a hatless imitation of what their mothers wore. These two pictures represent thirty years of progress in a rapidly changing world. Well the airplanes have certainly changed.

**1928**—Officers' wives of the Second Bombardment Group on maneuvers at Virginia Beach stand before the biplane flown by their husbands. Picture is from album of William Blaufuss, Pratt & Whitney representative, who was in squadron flying these bulky large-propped Martin NBS-1 night short-range bombers. Gunner stood up front.

## Northrop News Pictorial



**1958 NORCRAFTERS** — Wearing the "old look" in women's fashions in front of the "new look" in aviation, Northrop's N-155 counterair fighter, are, from left, Lucille Wood, Air Safety; Maxine Lewis, Fluid Dynamics; Gene Cross, Industrial Relations; Elaine Ellis, Fluid Dynamics; Janet Martin, Wing and Empennage; Carole Freeman, Cycle Test Lab; Arleen Johnson, Inspection Planning; Sandee Gaw, Administrative Services; Gail Reid, Engineering Facilities; Sandy Schneider, Data Requirements; Mary Ashby, Airframe & Mechanical Design.

**ANGLERS MARIPOSAN** — Barracuda hunters from Mariposa facility chartered a boat for last month's sea safari. From left: Bill Nelson, Bill Bucher, Vi Bucher, Pat Ziegler, Taylor Gluth, Jim Whitley, Chuck Bija, Bill Myerson, Jerry Middleton and Dave Jenkins. Two dozen calico bass and 14 barracudas were hooked.

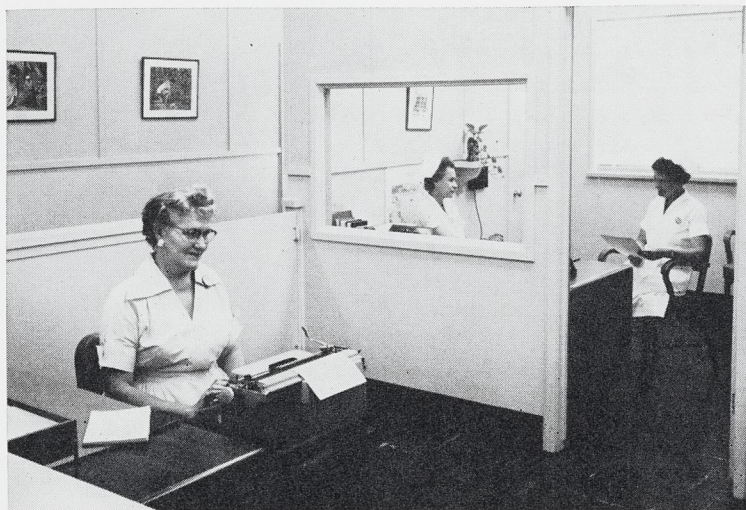
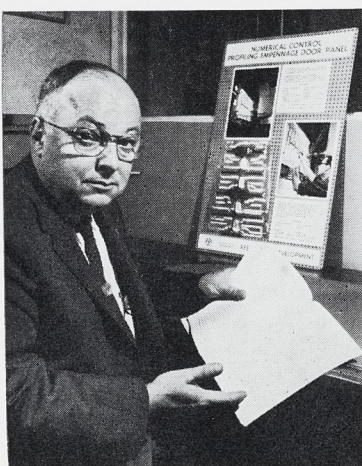


**BARRACUDAS BEWARE!** — Bill Myerson hauled in the biggest "snake" of the day—a 9 1/4-pound barracuda.



**HE WROTE IT**—But he can't read it. Chief Barney Gaiennie, Manufacturing Research and Development, holds a Japanese edition of a report he wrote on numerical control of machines. Northrop supplied report to AIA.

**NO SHADOW**—Bob Joyce, who supervised hospital modernization, demonstrates new 200-lb. 200-watt surgical lamp to Dr. Roger D. Mackey, chief, Medical Administration and Services. Modern fixture reflects in such a way that doctor does not shut out light while examining patient. Recently completed hospital modernization program included the latest in emergency equipment. The 1000 additional square feet of floor area incorporate a new treatment room, filing room, storage room, and a night operating room with the new lamp. Complete air conditioning was supplied throughout the hospital area.



**MODERNIZED** — Elise Williams, supervisor, Nursing Service, confers with Ardythe V. Voogd, lead nurse, in enlarged general office area where medical center activities are administered and coordinated. Hospital layout, fully contained and free from shop traffic, was redesigned to ensure an efficient flow of patients. As many as 15,000 visits a month are processed through Medical Services, thus safeguarding the health of Norcrafters.

## Streamlined Hospital



## NEWS BRIEFS

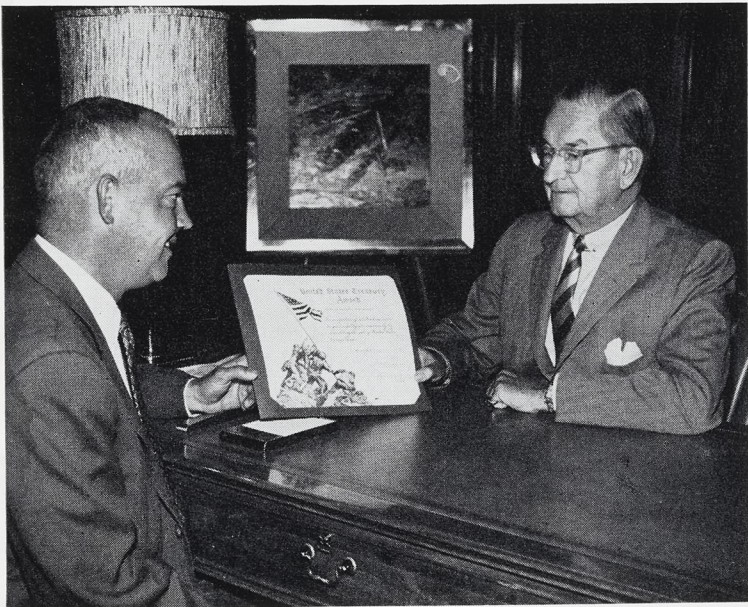
**AREA CUSTOMER RELATIONS**—John Alison, vice-president, Customer Relations, advises that Northrop subcontract activity will receive added impetus through new concept of "area" representation . . . Principal aircraft production centers in the nation are east coast, midwest and west . . . Customer Relations representatives are being assigned to these areas to screen and explore all potential avenues of business in subcontract lines suited to Northrop. Manufacturing, engineering, design, support, test, research and development subcontracts are main targets. First representative to be assigned under new area concept was Jack Hebard, previously purchasing agent in Materiel. His assignment is the western United States. Bob Shafer, until recently a Contract Administration representative based at McDonnell Aircraft, will head up the midwestern United States. East Coast representative is Jim Carpenter, announced R. E. Bowditch, Customer Relations project chief . . . Mr. Alison further announced that Army and Navy prime and team contract development will henceforth be handled by specifically assigned and qualified representatives of the department. "Our aim," he stated, "is to establish a well-balanced and comprehensive sales program to assure that the full potential of our fine Division facilities is completely utilized. We intend during the next months to investigate every source of aircraft and missile business to this end."

**PACE**—Dan H. Hill, Northrop Division treasurer, reports Finance Department has recorded an exceptionally high PACE showing . . . Department preliminary surveys have disclosed group effort substantially above average . . . Finance is first indirect Department to receive PACE ratings. (See PACE story, Page 2.)

**SECURITY**—General Manager Richard R. Nolan requests that all Norcrafters pay particular heed to security matters in their charge. Northrop security procedures are now under an improvement study. The program includes a company-wide inventory of all classified matter on hand, and overhauling of security procedures to narrow responsibility and facilitate compliance.

**NEW STEP**—Proposals have been submitted by Northrop on the North American F-108 and B-70 chemical bomber. (See News Briefs, 10 September.) Hypersonic performance of these aircraft requires that structures be built to withstand utmost extremes in speed and temperatures . . . "Northrop's skill in fabrication and brazing technique for the tremendous stainless steel components necessary for such airplanes admirably fit us to participate in this new era of aircraft design and manufacture," stated Vice-president and General Manager Richard R. Nolan. "This capability plus advanced planning, research and development in space-age processes is an asset of great value in contract considerations of this kind. Our current cost performance maintains the competitive capability evidenced by previous top AMC rating in the nation for pounds of airframe produced per man-hour. These, and our comprehensive roster of skills in manufacturing, tooling and engineering, and management willingness to keep pace with the advances of the space age, put us in top competitive position . . ." Bids on the F-108 will be awarded 1 November; on the B-70, 1 December. A new proposal for design and development, testing and manufacture of a ground support subsystem will be made on the B-70, 7 October. (See News Briefs, 10 September.)

**NEW FISCAL**—The Northrop Division entered the new fiscal year, 1958-1959, with minimum dislocation of budget, it has been announced by Dan H. Hill, Northrop Division treasurer. (See News Briefs, 13 August.) This is despite decrease in direct hours effected at the time of Nortronics breakaway . . . Budget realizations were more than met for fiscal 1957-1958. Indications, based on profit picture soon to be released, are that budget for this year, which has same basic structure as last year, will do equally well.



# Northrop News

Issued Every Two Weeks at Northrop Field, Hawthorne, Calif. Wednesday, September 24, 1958

## T-38 Turbojet Engine Arrives on Schedule—Testing Now Under Way

### Sparkley - - !



**SONGSTRESS** — Sparkley Betty Barkley, Orrin Tucker stylist, is featured at Beverly-Hilton Management Club dinner dance. Date—October 18. Get tickets now.

## M-C Folk to Dine, Dance In October

The new and exotic International Room of the Beverly Hilton Hotel will be the setting for the Northrop Management Club annual dinner-dance, Saturday, October 18.

The dance area—twice as large as ever before—will be polished by couples gliding to the rhythms of Orrin Tucker and his orchestra. Featured chanteuse in the entertainment bill of fare is "sparkley" Betty Barkley, pictured above.

According to Management Club President Charlie Davis, dinner-dance ducats are on a first-come-first-served basis. Tickets sales to date are nearing the capacity attendance of 300 couples.

## Time for a Change

The switch from Pacific Daylight Time back to Pacific Standard Time is scheduled for the small hours of Sunday morning, September 28. Don't forget to turn your clocks and watches back one hour.

The end of daylight time spells the end of summer. But on the plus side—the "lost hour" snatched last spring is returned. All those who have missed that hour's sleep can make it up Saturday night.

**SAVINGS BOND AWARD**—Outstanding participation of Northrop personnel in the "Share in America" campaign merited official U.S. Treasury Department recognition.

President Whitley C. Collins accepted the award on behalf of Northrop Aircraft, Inc., from George Grieb, director, Savings Bond division. More than 60 per cent of Northrop folk participate in payroll deduction plan.

The first of the new light-weight J-85 turbojet engines which will power the USAF-Northrop T-38 supersonic space-age trainer has arrived on schedule and is now undergoing compatibility testing.

Twin J-85s, developed and produced by General Electric Co., will power the T-38. A second engine is expected to arrive this month.

Meanwhile, the first engine is being run in a static-mounted T-38 fuselage to check its operation with related T-38 systems such as fuel and cooling systems.

Delivering extremely high thrust-to-weight ratios, the new engines figure prominently in Northrop's concept of low-cost, high-performance aircraft. The T-38 is but one member of a Northrop family of such aircraft now under development. Capable of providing Century Series fighter performance at a fraction of the weight and cost of the fighters, the T-38 is designed to train pilots for fighter and bomber missions as well as for a new generation of space-age craft.

## ALISON WRITES ON FLIP CORKIN

John R. Alison, vice-president, Customer Relations, appears in the October Reader's Digest with a story on Colonel Philip Cochran.

The story in the Digest's well-known "Most Unforgettable Character" series tells of the flying career of the man whom Milt Caniff used as model for "Flip Corkin" in Terry and the Pirates.

## Infrared Studies May Have Cancer Research Uses

Leading medical authorities paid a recent visit to Nortronics Hawthorne to consult on infrared scanner studies as applied to the problem of studying cells for heart and cancer research.

The visitors were Dr. Murray Eden of the National Heart Institute; Dr. Charles F. Branch, consultant for the American Cancer Society; and Dr. George Z. Williams, chief of clinical pathology for the Cancer Institute.

According to Milburn B. Grier, research scientist with the Nortronics Advanced Development group, the medical officials are interested in the scanning techniques for microscopical applications.

He stated that the same principles developed by Nortronics in the field of military infrared applications were described in relationship to the possibility of using infrared in the detection and control of cancer and other human diseases.

"This is an extremely significant inquiry," Grier said. "We have developed infrared systems for gathering information about infinitely large objects. Now, it may be possible to apply the same techniques to finding out about the extremely small objects—human cells, for example."

The particular infrared application being studied is an electro-optical gathering and interpreting system developed by Nortronics.

## Tests on Practice Bomb and Rocket Carrier Now Complete

Northrop's practice bomb and rocket carrier has successfully completed Air Force and Navy testing programs and is available for operational use, it was announced last week.

Designed to increase the weapons training capability of supersonic combat aircraft, the pod-shaped carrier was developed by the Northrop-Hawthorne Division to meet Air Force and Navy requirements for pilot proficiency training.

The new training device is pylon-mounted. It can carry practice bombs and rockets in various assortments, enabling pilots to carry out multiple weapons training assignments in a single mission.

In the Air Force series of tests the carrier was flown on F-100A and F-100D fighters. The Navy tested it on FJ-4, F-3H, A-4D and F-9F-8 aircraft.

The carrier was subjected repeatedly to supersonic speeds and to forces in excess of six positive Gs. Dive, skip and LABS (toss) bombing techniques were used in the tests.

Force ejection of bombs is an outstanding feature of the new training device. Cartridges eject the bombs out of the plane's high-speed airstream, stabilizing their flight and preventing them from damaging the aircraft.

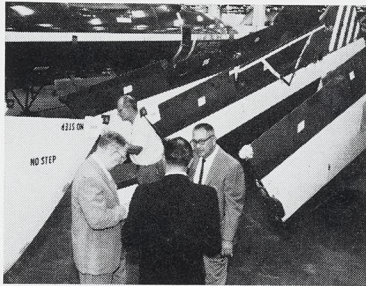
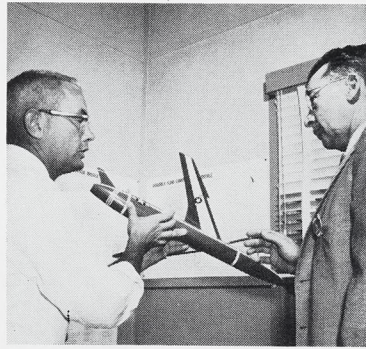
The carrier weighs approximately 110 pounds empty. It is 7 feet 7 inches long, 15 inches wide and 11 inches high. It can be installed without the use of ground support equipment and can be loaded in less than 10 minutes.

Suitable for mounting on either 14-inch or 30-inch suspension systems, the carrier can be used without modification to the aircraft. Its load can be varied to include four bombs and two rockets, two bombs and four rockets, or six rockets.





**ASSIGNMENT**—Arch C. Wallen, director of Manufacturing Production Operations, tells Dave N. Petersen, chief methods engineer, "Let's apply PACE program here." Northrop's introduction of PACE into the missile and airframe industry has assisted shop personnel in achieving the high degree of production efficiency that we have.



**EXPLAINS** — Max J. Fayrweather, superintendent, Missile Manufacturing, shows PACE Supervisor J.C. Creason work performed in his charge.

**CHECK** — Joe Steinbraker, PACE man D.N. Petersen, and Tom Blair, assistant superintendent, Missile Manufacturing. Many factors determine rating.



**RANDOM CHECK** — Joe Steinbraker observes. From left: Marvin Hink, Jack Niles, Ed Walkley, George Brittenham, and Raleigh Bunch, ladder right, on Snark line.

# PACE • effort's footsteps lead to efficiency

An important new element of Northrop's overall program for the improvement of its competitive position is a management "tool" named PACE.

The philosophy behind PACE is that it is a method for eliminating interrupting factors and conditions so that a group may perform a better job easier.

PACE philosophy can be applied to any group effort or any industry. Because of its universal appeal, many officers of the armed forces and executives from other aircraft companies have visited Northrop to learn more about this program.

Over the past six months, Northrop has seen a substantial increase in the efficiency of factory and office units. An additional increase in efficiency is targeted for the next six months.

The PACE program is contributing to this increase in productivity.

PACE is the newest tool to be incorporated in the highly successful cost control program at Northrop. It is a scientific method which allows groups a constant indication of their own productive efficiency.

PACE was developed at the instigation of Richard R. Nolan, vice-president and general manager.

The first Department to receive the benefits of PACE was Manufacturing,

headed by Vice-president F. W. "Bob" Lloyd.

The success of PACE in this first assignment, especially in the factory elements, is now a Company byword.

**BOB LLOYD**, vice-president, Manufacturing. His department has had substantial increase in efficiency through application of PACE.



Vice-president Lloyd and members of his supervisory team proudly point to the efficiency betterment achieved by the shop to date.

PACE goal is to measure group effort in performing an assigned task. PACE is never used to evaluate individual performance. Observers do not use stopwatches or cameras. Their tools are observation and random sampling techniques.

Each PACE observer has long experience in the field of work he is observing. He also receives intensive PACE training before he is allowed to work alone.

Before the actual PACE measurement begins, the observer makes a two-week basic study of the department he will observe. He learns about the department's tasks, the nature of its product, its tools and equipment. And he explains to the personnel exactly what he is going to do and how he is going to do it.

During the program the observer tours the department several times a day on a random schedule. He evaluates the group effort, and percentage of the group who may be idle or out of the work area. He then makes a statistical picture of the total group, comparing it with normal optimum effort — that is, the known, established normal average pace of an efficient group. To this effort he assigns a percentage rating.

Back at the PACE office, the results of his observations are tabulated, analyzed, and converted to chart form. The goal for each organization is to bring its PACE line up into the area range of from 85- to 100-per cent of optimum normal effectiveness. The beginning point of the PACE line, however low, is not considered critical. What matters most is the trend of the line and the rate of change. It should rise steadily until it reaches the control area.

This PACE line is charted each week. Progress is recorded. PACE officials develop reports primarily for operating supervision. Problem areas are analyzed and improved. Costs are reduced by shop elimination of problems that hinder high PACE performance.

When the PACE index is added to and compared with other measurements, a more complete performance picture is presented to supervisory personnel. These measurements have been the regular standards used to rate progress before PACE was introduced by Northrop. They include the following factors.

Personnel index: the department population during the current week compared to the base week.

Budget realization index: the number of hours allotted for a given job compared to the actual number of hours spent.

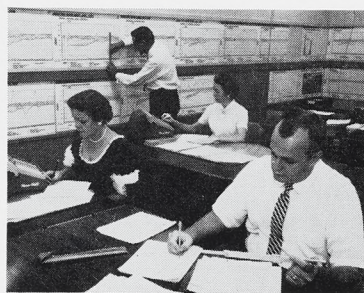
Schedule index: actual production compared to scheduled production. Being ahead of schedule is just as unsatisfactory as being behind and creates its own set of problems.

Quality index: actual production quality compared to standards set by Quality Control organization.

Shortage index: materials available compared to materials needed.

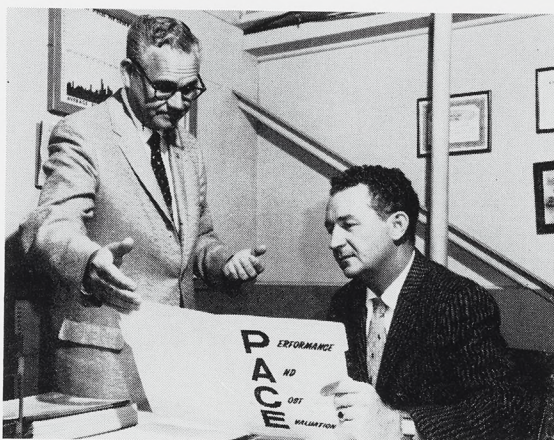
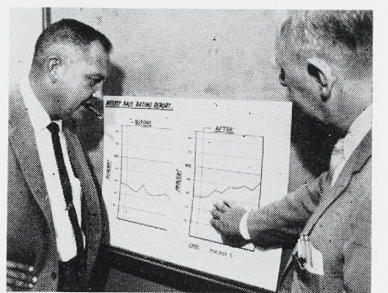
PACE does not supplant or replace any of the above indices. It provides an additional index to assist the shop in efficiency improvement.

Full credit is to be given production supervision for the manner in which they have utilized PACE reports and other control data to show a steady improvement in operating efficiency over the past six months.



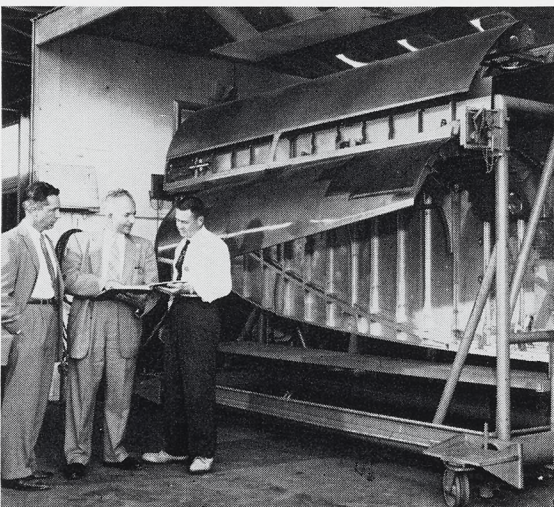
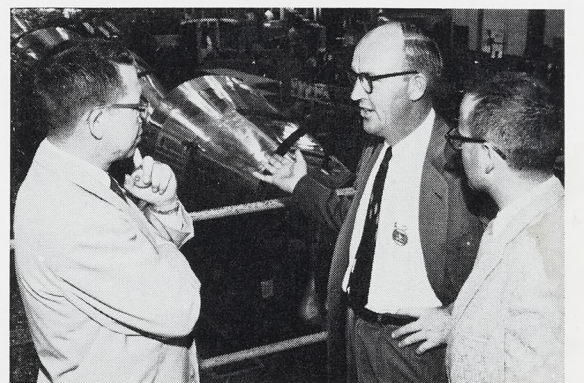
**RESULTS CHARTED** — Joe Steinbraker explains progress to Tom Blair, notes how PACE line is approaching 100 per cent efficiency. Departure point is not crucial. What matters most is trend of the PACE line. It should rise steadily, then stay constant in peak area.

**PACE CREW**—Data of PACE observer are tabulated, analyzed and recorded in chart form by Methods Engineering. Dee Bayer and Rovene Mommer, statistical clerks; Les Rajczi, PACE analyst; Dan Scheik, artist, comprise compact PACE crew. PACE is inexpensive.



**DETAILED REPORT**—Ed Nolan, assistant superintendent Sheet Metal Production Fabrication, examines full weekly report detailing measurement factors. PACE observer Joe Parks works area.

**BOEING**—Subcontracts also receive benefits of PACE application: Thomas Frederick, PACE observer, with Ole Omley, superintendent Subcontracts Manufacturing, and Bill Spencer, Boeing Aviation.



**MCDONNELL**—Improvements from PACE are discussed by Clyde Rockey, McDonnell representative; Ralph Stewart, supervisor, PACE program; and Jack McFall, head, McDonnell Voodoo assembly lines.



**AIR FORCE INTEREST** has been generated by PACE. Richard R. Nolan, vice-president and general manager, who initiated PACE, speaks with Major General Wiley D. Ganey, special assistant to the vice-commander, ATC.

## Northrop News

Vol. 16

Northrop Field, Hawthorne, Calif.

No. 26

A NORTHROP AIRCRAFT INC. PUBLICATION

Published every other Wednesday by  
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CHARLES BARR, Director

CHARLES BRADFORD, Editor

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# BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters. Items advertised in "For Sale" and "For Sale or Trade" categories are limited to a maximum of \$50. Price must be stated.

Box numbers will be provided to Norcrafters who do not have home phones or who do not wish calls. Replies to box numbers are to be in writing. Box number replies will be forwarded by the News Office without delay.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Monday, nine days before publication.

## FOR SALE

DISTRIBUTOR, Mallory dual-point, 1936-1956 Plymouth-Dodge 6s, \$10. Box 2603.  
BED, queen-size, innerspring mattress, box spring, frame, \$40. FR 9-9616. A  
CHEVROLET, 1949 2-dr, \$50. PL 5-9075.  
HOUSEHOLD FURNISHINGS, lamps, Shetland china 33", white & gold, silk swirl shades, \$30 pr; rocker, child's provincial, black, \$7. Box 2602. A  
STOVE, Gaffers & Sattler tabletop-type, \$25. FR 6-5656. A  
SOFA, convertible-type, matching chair, 3 yr old, \$25. DA 3-4580. A  
TV SET, GE 12 1/2" console, \$50. TH 6-5589. A  
REVOLVER, MP-type, 6" barrel, \$50. OR 1-1660. A  
ACCORDIAN, 120-button bass, case, \$50. FR 6-1965. A  
WASHER, Easy Spindrier semi-automatic, \$25. FR 9-6888. A  
PARROT, half-moon-type, \$25. GL 4-7770. A  
FURNITURE, salem maple; end tables, 2; coffee table; \$25. JA 7-8745. A  
FRONT AXLE, chopped, Ford convertible, \$8. OS 5-2159. A  
CAMERA, Bolex 35-mm, f4.5 coated lens, coupled range finder, leather case, flash, \$22.50. HA 1-3208. A  
DINING ROOM SET, walnut, table w/2 leaves, 4 chairs, \$20. OR 1-6692. A  
WASHER, 1953 Speed Queen automatic, \$50. FR 6-9977. A  
BICYCLE, English-built Hercules girl's 26", gears, rear carrier, front basket, new tires, \$25. OR 7-0510. A  
SCREENS, 36"x54" & 36"x62" wooden-frame-type, \$1 ea. PL 5-7521. A  
BABY EQUIPMENT, stroller, \$3; buggy, \$8. FR 9-5088. A  
GIRL SCOUT UNIFORM, size 10, dress, hat, belt, socks, \$5. FR 2-8019. A  
TRAILER, 4'x7' 2-wheel utility-type; 2' stake sides; tarp; turn, stop & tail lights; \$50. FR 4-7059. A  
LUGGAGE CARRIER, metal cartop-type, \$5. OS 6-8331. A  
FURNITURE, sofa, chair, traditional, salmon matelisse, \$25; chair, T-cushion-type, grey & green frieze, \$20. PL 8-7138. A  
TV SET, Zenith 12" console, mahogany, folding doors, \$25. GA 4-5463. A  
TELESCOPE, 42-mm, 67X-100X-200X, 36" tripod w/adjustable post, erector assembly, Barlow lens, \$30. PL 4-8957. A  
ROLLER SKATES, Chicago woman's size 6 1/2, white shoe-type w/stoppers, \$9. PL 9-6238. A  
REFRIGERATOR, Electrolux 4.5 cu ft, \$40. PL 4-7859. A  
BICYCLES, boy's 24"; girl's 26", 2; \$10 ea. DA 4-9066. A  
WEDDING GOWN, size 12, white lace, hooped underskirt, fingertip veil, \$50. FR 6-1832. A  
TIRES, 3, 6.00x16, wheels, \$10. FR 5-7822. A  
DINETTE SET, limed oak & wrought iron table, 4 chairs, under \$50. FR 6-3507. A  
CRIB, mattress, \$18. OS 5-9740. A  
HOUSEHOLD FURNISHINGS, headboard, \$9; table lamps, 2, \$4 ea. FR 6-2536. A

## FOR SALE

HI-FI CABINET, mahogany, \$45. WE 5-6824. A  
PIANO, Wurlitzer upright, \$50. PL 6-9775. A  
WHEEL CHAIR, Everest & Jennings adult-size, \$50. OS 5-6052. A  
STOVE, Firestone apt-size, butane or natural gas, \$35. DA 4-9188. A  
ELECTRIC SHAVES, Remington 60 Deluxe, \$15. HO 4-7747. A  
BATHTUB, cast iron, w/fittings, \$20. OS 6-8816. A  
ZIPPER FOOT, universal-type, right & left positions, \$1. Box 2603. A  
PUP, beagle, male, hunting stock, AKC, \$35. HA 1-4914. A  
REFRIGERATOR, 1951 Westinghouse 7 cu ft, \$50. TO 2-3758. A  
TOYS, Flexy racer, cost \$19, \$8.50; Rocket poqo stick, cost \$12, \$5. FR 4-1690. A  
SWING SET, swings, 2; glide, \$10. OS 5-6016. A

## WANTED TO BUY

DRAFTING EQUIPMENT, beveled edge, French curve, 30°/60° triangle, FR 9-9616. B  
SHOP EQUIPMENT, table saw; jointer, 8"-10". OS 6-5791. B  
SCHOOL UNIFORM, Hawthorne Christian School boy's size 6-8 short-sleeve shirts, DA 9-5016. B  
BUGGY, twin-size. PL 4-1824. B  
RECORDS, 12" LPs. PL 2-9597. B

## FOR TRADE

SEWING MACHINE, Singer portable, trade for camping equipment or power mower, FA 8-3306. C  
MICROMETER, Starrett 1", trade for Starrett 2" tenth-graduated micrometer. PL 5-9075. C  
DOG, German shepherd-collie, 6-mo-old male, loves children, OS 9-2910. D  
KITTENS, 2-mo-old, long-hair, white & black. Box 2601. D  
DOG, terrier, 4-mo-old female, white, FR 5-4763. D

## FREE (to be given away)

DOG, German shepherd-collie, 6-mo-old male, loves children, OS 9-2910. D  
KITTENS, 2-mo-old, long-hair, white & black. Box 2601. D  
DOG, terrier, 4-mo-old female, white, FR 5-4763. D

## CHILD CARE OFFERED

CHILD CARE, licensed, hot breakfasts & lunches, near Northrop, references. OS 5-7088. G

## FOR SALE OR TRADE

TABLE SAW, Craftsman, 1/4-hp motor, \$25 or trade, OS 9-3819. M  
MUSIC CENTER, TV set, record player, 3-band radio, \$50 or trade for tape recorder, FR 2-0437 after 11 a.m. M  
REVOLVER, H&R 9-shot .22, double & single action, holster, \$28 or trade for 30.06 rifle, FR 9-3128. M  
TIRES, 4, 5.50x18 12-ply airplane-type, tubes, wheels, bearings, axles, \$25 or trade. OS 6-2435. M

• tennis  
men and women—  
contact  
personnel activities  
tennis •

## "Windjammer" Screenings Draw Five Saturday Encores

Special Northrop performances of "Windjammer" encore at Hollywood's Chinese Theatre.

For the next five Saturdays—September 27 through October 25—arrangements have been made by Personnel Activities and Services for 5 p.m. screenings of Louis de Rochemont's Cinemiracle spectacular.

The late-afternoon performances also feature the special price of \$1.25 per person, tax included, as against the regular \$2.85 and \$2.20 rates. There are no reserved seats at these showings, for which the doors open at 4:30 p.m. The performances conclude at 7:20 p.m.

Ticket order forms are available at

## Toastmasters 1398 Chair New Officers with Dinner

Saturday, October 4, is the date set for installation of the newly elected Toastmasters 1398 officers.

The evening's agenda begins at 7 with a social hour—and then dinner at 8. Setting for the festive board is the Club Alondra, 16411 Prairie Avenue.

New officers are President Len Haueter, Educational Vice-president Ray Brady, Administrative Vice-president Jay Rayner, Secretary Verne White, Treasurer Bob Langner, and Sergeant at Arms Joe O'Rendy.

## INDIAN JEWELRY SHINES TONIGHT

Southwestern Indian jewelry is in the spotlight for tonight's NRC Gem and Mineral Club meeting.

As guest speaker and exhibitor, Mrs. Marjorie Bartelli will display her extensive collection of antique turquoise and silver artifacts, which demonstrate the painstaking craftsmanship of the Indians of the Southwest.

This special program, open to all, is slated for 8 p.m. at the NRC Clubhouse, 175 North Hawthorne Boulevard, Hawthorne. Refreshments will be served.

## Distaff Skin Divers Top Ranks in Spearfishing

The team of Kemble and Rogers stole the show at the Grand Bahamas last month. (See photo on Page 4.)

Wielding a potent speargun, Norcrafter Lillian Kemble teamed up with friend Ellen Rogers to fish their way

to the Women's National Open crown—most sought honor in the spearfisher's sea.

Lillian, NRC Skin Diving night commissioner, and Ellen tamed 103.75 pounds of Nassau grouper and hogfish—11 in all—to win the team title. The basis was largest aggregate catch for the three-hour AAU-sanctioned competition.

Solo top slot went to Ellen for 71.5 piscatorial pounds, while Lillian netted the third-place Grand Bahama Club cup with 32.25 pounds of Gulf Stream seafood.

The girls competed in this invitational free-diving meet equipped with the standard fins, snorkel, face mask and speargun—sans SCUBA (Self-contained Underwater Breathing Apparatus).



## RIDES WANTED

7:00 a.m. — 3:45 p.m.

(Zone 9)  
RAMONA & 154th ST., Lawndale, CAR-  
RIE HORTON (5508-19492, ext. 2755).  
OS 5-5246. 2-9

(Zone 11)  
MARIPOSA & SHELTON, El Segundo.  
(Consider car pool.) BILL DUVAL (5516-  
45536, ext. 533). EA 2-4306. 2-11

(Zone 13)  
SEPULVEDA & WASHINGTON, Culver  
City. H. L. BENNETT (5338-16561, ext.  
2470). VE 7-4237. 2-13

(Zone 14)  
CENTINELA & LA BREA, Inglewood. MA-  
THA HICKS (5962-23979, ext. 2208). OR  
1-9682. 2-14

7:30 a.m. — 4:15 p.m.

(Zone 7)  
CARSON & VERMONT, Torrance, SALLY  
ROBERTS (9542-51026, ext. 2228). FA  
8-3825. 3-7

(Zone 8)  
WESTERN & 237th ST., Torrance, J. F.  
KISSEL (4700-28503, ext. 1986). DA 6-  
8747. 3-8

(Zone 9)  
HAWTHORNE BLVD. & MANHATTAN  
BEACH BLVD., Lawndale. ESTELLE PAL-  
SON (8913-54826, ext. 1213). OS 9-  
3170. 3-9

(Zone 10)  
MANHATTAN BEACH BLVD. & PECK,  
Manhattan Beach, M. L. POTTER (5120-  
43593, ext. 2304). FR 9-4609. 3-10

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA BLVD. & WESTERN,  
Hollywood. (Consider car pool.) HAROLD  
GREER (3242-53657, ext. 2775). HO 4-  
6094. 5-1

(Zone 3)  
FLORAL & MONTEREY PASS RD., Mon-  
terey Pass. (Consider car pool.) O. H.  
CANO (3273-12887, ext. 1479). AN 3-  
3467. 5-3

(Zone 7)  
MAIN & 222nd ST., Torrance. (Consider  
car pool.) N. K. YOUNG (3544-44811,  
ext. 1478). TE 4-6920. 5-7

(Zone 9)  
REDONDO AVE. & 5th ST., Manhattan  
Beach, EVELYN GORDON (8800-48642,  
ext. 1458). FR 4-7188. 5-9

PRAIRIE & REDONDO BEACH BLVD.,  
Lawndale. INO COLMENARES (8830-  
56280, ext. 1458). 5-9

(Zone 10)  
VALLEY & 24th PL., Hermosa Beach, BEV-  
ERLY YOUNG (8800-51009, ext. 1458).  
FR 4-7543. 5-10

(Zone 12)  
DOTY & IMPERIAL, Inglewood. SHIRLEY  
BAKER (1232-53666, ext. 666). OR 3-  
4087. 5-12

AIRPORT & MANCHESTER, Los Angeles.  
(Desire car pool.) BARBARA HALLOCK  
(3240-52210, ext. 1257). OR 1-0862.

4:45 p.m. — 1:15 a.m.

(Zone 10)  
HAWTHORNE BLVD. & 137th ST., Haw-  
thorne. EARLINE IRVIN (9513-53755,  
ext. 2264). OS 9-3079. 8-10

## SHARE THE RIDE

## RIDES OFFERED

7:00 a.m. — 3:45 p.m.

(Zone 5)  
CHAPMAN & HARBOR, Garden Grove.  
(Via Chapman, Hwy 39, Rosecrans.) R.  
H. BENTON (5520-20687, ext. 1809).

(Zone 10)  
MANHATTAN BEACH BLVD. & SEPUL-  
VEDA, Manhattan Beach. (Via Hawthorne  
Blvd.) J. A. SUTLIF (5564-20907, ext.  
555). FR 6-5707. 12-10

(Zone 11)  
MARIPOSA & SHELTON, El Segundo.  
(Consider car pool.) BILL DUVAL (5516-  
45536, ext. 533). EA 2-4306. 12-11

7:30 a.m. — 4:15 p.m.

(Zone 12)  
GREVILLE & LENNOX BLVD., Inglewood.  
BEULAH KUSEL (8914-45840, ext. 2671).  
OR 7-6339. 13-12

(Zone 14)  
CRENSHAW & FLORENCE, Inglewood.  
(Via Prairie.) CHARLOTTE WOOLUMS  
(9420-27690, ext. 2151). PL 3-7484.

8:00 a.m. — 4:45 p.m.

(Zone 1)  
SANTA MONICA BLVD. & WESTERN,  
Hollywood. (Consider car pool.) HAROLD  
GREER (3242-53657, ext. 2775). HO 4-  
6094. 15-1

BEVERLY & WILTON, Los Angeles. (Via  
Wilton, Arlington, Vernon, 8th Ave.,  
Crenshaw.) RALPH LANDERS (8820-24187,  
ext. 417). HO 4-7747. 15-1

(Zone 3)  
FLORAL & MONTEREY PASS RD., Mon-  
terey Pass. (Consider car pool.) O. H.  
CANO (3273-12887, ext. 1479). AN 3-  
3467. 15-3

(Zone 7)  
MAIN & 222nd ST., Torrance. (Consider  
car pool.) N. K. YOUNG (3544-44811,  
ext. 1478). TE 4-6920. 15-7

(Zone 12)  
AIRPORT & MANCHESTER, Los Angeles.  
(Desire car pool.) BARBARA HALLOCK  
(3240-52210, ext. 1257). OR 1-0862.

(Zone 14)  
OVERHILL & SLAUSON, Los Angeles.  
(Via Crenshaw.) CORINNE DAVIS (3144-  
12458, ext. 1848). AX 4-0652. 15-14

3:45 p.m. — 12:15 a.m.

WESTERN & ORANGETHORPE, Buena  
Park, J. L. KOSS (5501-17502, ext. 2200).  
LA 2-3824. 16-5

4:45 p.m. — 1:15 a.m.

BROOKHURST & WESTMINSTER, Garden  
Grove. A. L. BURTON (5233-45341, ext.  
2002.) JE 1-2414. 18-5

## Grid Ducats for UCLA And SC Home Tilts at Personnel Activities

Tickets for all UCLA and SC home games may be obtained by Norcrafters at Personnel Activities and Services offices.

A limited quantity of these tickets will go on sale at the Plant One Personnel Activities office approximately 10 days before each scheduled home game.

Norcrafters in other facilities should contact the Personnel Activities office in their area.

## NRC Good Time Table for October

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, 2784. All clubs meet at NRC Clubhouse unless otherwise noted.

**ARCHERY (days), Wes Williams**  
Meet Wednesdays, 6:30 p.m. Archery classes now in session.  
**ARCHERY (nights), Paul Randolph**  
Meet Wednesdays, 12:15 p.m.  
**ART CLUB (days), Forrest Ayrest**  
Meet in Annex Thursdays, 7 p.m. Models furnished by NRC. Sculpture classes Wednesdays, 7:30 p.m. Election October 9.  
**ASTRONOMY (days), Jim Stowe**  
Meet 2nd & 4th Mondays, 7:30 p.m.  
**BASKETBALL, John Mihelich**  
Tournament at Leuzinger Hi October 18 & 25.  
**BIBLE STUDY, Roy Stahl**  
Plant 1—Daily, 11:30-12:15, Tool Design Bldg; 11-11:45, 5566 Conf. Room. Plant 11—Mondays & Thursdays, 12-12:45, Conf. Room 2. Eng. Center—Daily, 12-12:45, Reliability Conf. Room.  
**BOAT CLUB, Fred Wheeler**  
Meet 1st Wednesdays, 7:30 p.m. Night shift meets 3rd Thursdays, 2:30 p.m. Water Ski Club (days) meets 3rd Thursdays, 7:30 p.m. Election October 8.  
**BOWLING (days), Dave Carney**  
**BOWLING (nights), Charlie George**  
Winter leagues now rolling.  
**BOY SCOUTS, Stan Morris**  
Sea Scouts, Intermediates, Cub Scouts. All Norcrafter boys welcome.  
**CAMERA CLUB (days), Fred Armstrong**  
Meet 1st, 3rd & last Wednesdays, 7:30 p.m.  
**CAMERA CLUB (nights), John Newman**  
Meet 1st & 3rd Saturdays.

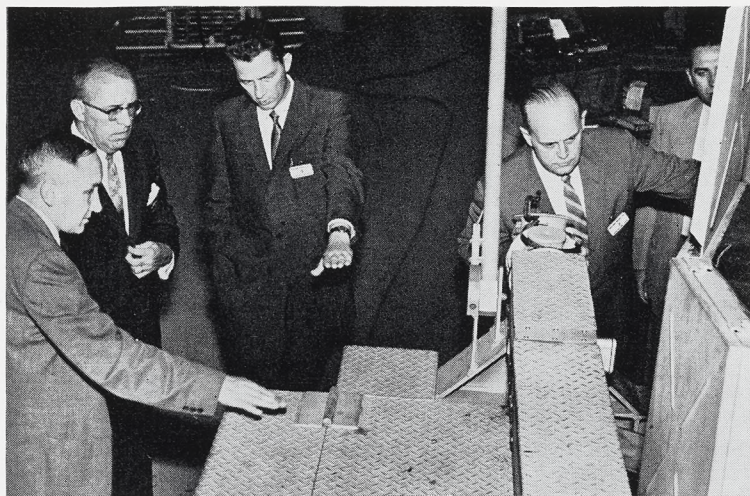
**CAMPING CLUB, Fred Brant**  
Meet 1st Mondays. Lake Cachuma October 18-19. Lions Canyon October 25-26.  
**CHESS CLUB, Bill Henderson**  
**GEM & MINERAL CLUB (days), Raymond Cole**  
Meet 4th Wednesdays. Mineralogy classes Thursdays, 7-9 p.m.  
**GOLF (days), Ted Deguisne**  
**GOLF (nights), Russ Munsen**  
San Clemente October 19. Ojai Valley November 16.  
**GUN CLUB (days), Carl Turner**  
Meet 3rd Wednesdays, 7:30 p.m. Pistol shoot at Torrance October 13, 2 p.m. Rifle shoot at Torrance October 26, 1 p.m. Election October 15.  
**MIXED CHORUS, Burt Bracher**  
Meet Tuesdays, 7:30 p.m. All Norcrafters welcome.  
**MODEL RAILROAD, Jack Wilson**  
Meet in Annex Thursdays, 7-10 p.m. Visitors welcome. Need electricians, carpenters & scenic artists to help with new layout.  
**PHILATELIC CLUB, Eugene Richardson**  
Meet 2nd & 4th Mondays, 7 p.m.  
**RADIO CLUB (days), Andy Dolak**  
Meet last Thursdays, 7:30 p.m. Radio code class meets Wednesdays, 7:30 p.m. NRC's station is W6VPZ.  
**RADIO CLUB (nights), Merwin McGrew**  
Meet last Thursdays, 1:30 p.m.  
**SKEET CLUB, Dan Kawashima**  
Meet alternate Saturdays at Long Beach Dominguez Gun Club on Artesia Blvd. October 4 & 18, 10:30 a.m. Duck Tower Shoot & Chicken Shoot October 4.

**SKIN DIVING (days), Ralph Gonzales**  
Meet 3rd Wednesdays, 7:30 p.m. Catalina Lobster Festival October 4.  
**SKIN DIVING (nights), Lillian Kemble**  
Meet 3rd Wednesdays, 1 p.m.  
**SPORTS CAR CLUB, Jack Kirkpatrick**  
Meet 2nd Thursdays, 7:30 p.m.  
**SQUARE DANCING, Roy Jackson**  
Beginners' class at Gardena Barn, 15016 Daphne, 2nd, 3rd and 4th Sundays, 3-6 p.m.  
**SURF FISHING, John Pawlicki**  
Meet 1st Tuesdays, 7:30 p.m.  
**TABLE TENNIS, Robert Burke**  
League play Wednesdays, 5 p.m.  
**TOASTMASTERS 212 (days), John Walker**  
Meet at Western Avenue Country Club Thursdays, 6:30 p.m.  
**TOASTMASTERS 1398 (nights), Sam Grutis**  
Meet at Western Avenue Country Club Thursdays, 12:15 p.m.  
**TOASTMASTERS 2583 (days), Howard Cornelius**  
Meet at Kim's Restaurant Mondays, 6:15 p.m.

## FOR THE LADIES

**BOWLING (days), Joan Ryan.**  
**BOWLING (nights), Mary Mimnaugh**  
Winter leagues now rolling.  
**GIRL SCOUTS, Dallas Vasquez**  
Mariners, Intermediates, Brownies. All Norcrafter girls welcome.  
**TOASTMISTRESS, Marge Gates**  
Meet in NRC Clubhouse Board Room 1st & 3rd Thursdays, 7 p.m.





**SNARK LAUNCHER**—Officials of American Car and Foundry Industries, Inc., manufacturer of the Snark's mobile launcher, toured Hawthorne with Northrop's R. D. Bolen, second left, supervisor, Major Subcontracts. They are, from left, President Dr. Marshall G. Holloway, Nuclear Products-Erco Division; Ernest Longenecker, director, Manufacturing and Engineering; Fred C. Short, Contracts; and Henry F. Arts, chief engineer, Buffalo Division.

## Northrop News Pictorial

## Bahama Dives Net Titles, Trophies



**DUO SPEARS THREE**—Norcrafter Lillian Kemble, right, and Ellen Rogers captured three spearfishing trophies in the recent Women's National Open staged at the Grand Bahamas. By spearing 11 hefty fish, Ellen and Lillian, NRC Skin Diving night commissioner, topped the field in team aggregate and were first and third, respectively, in individual aggregate honors. See Page 3 story.



**SPOKANE SKIES**—Washington Air National Guard Scorpion creases the high blue skies above Spokane, Washington, on her eternal quest for danger to our country. Airplane is from the Ninth Air Division's 42nd Air Defense Wing, Geiger Field, Spokane. The photo was taken by A/3C James H. Baughx who rode on wing to get shot.

**COCOA BEACH NSA PREXY**—Floridian Norcrafter Mrs. Kathleen M. Dearstyne, right, is shown with Mrs. Katherine Ewin

at the recent National Secretaries Association installation ceremonies, marking inauguration of the Cocoa Beach chapter. Kathleen, head of the new chapter, is departmental assistant in Operations Services.



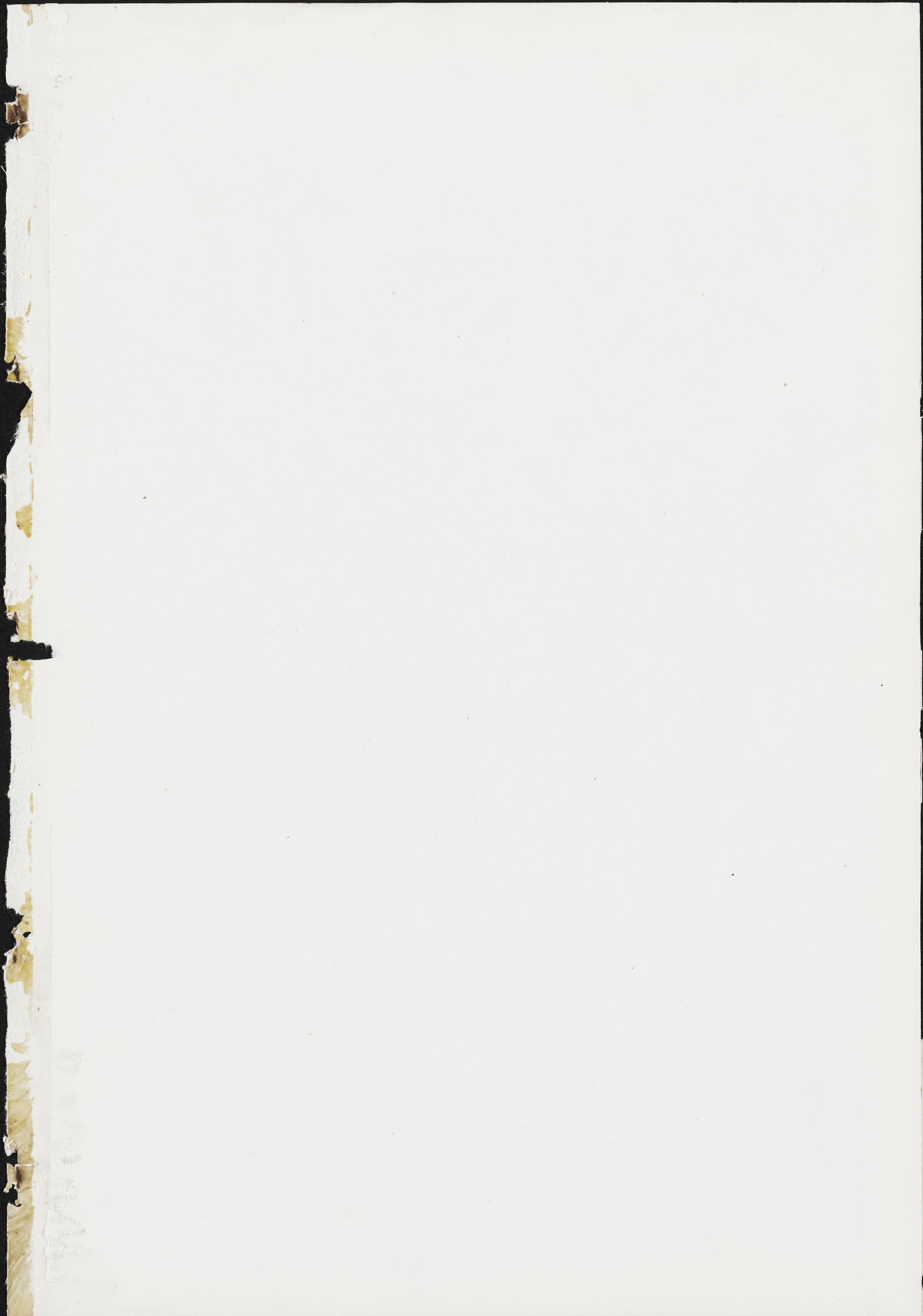
## Three Rs Meet T-38



**TEACHERS INTRODUCED TO AIRCRAFT INDUSTRY**—For their initial glimpses of industrial Southern California, 33 teachers—new to the Hawthorne School District—toured the T-38 line and the Product Display Building. Examining the cockpit of Northrop's supersonic trainer are Mrs. Sally Henry, Mrs. Jane Sandbom, Mrs. Patricia Morgensen and Mrs. Judith Lange. They will enlighten primary- and intermediate-graders.

**EDUCATORS TOUR**—Cliff McCammon, Hawthorne School District superintendent, listens to T-38 point given by Jack McCammon, assistant to the general manager, Northrop Division. At right is Reese Watson, asst. superintendent.







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